

# GEOGRAPHY OF LANDS OVERSEAS



SECOND EDITION

**McCONNELL - WATSON - McHUGH**  
**GAGE SOCIAL STUDIES SERIES**

CURRICULUM

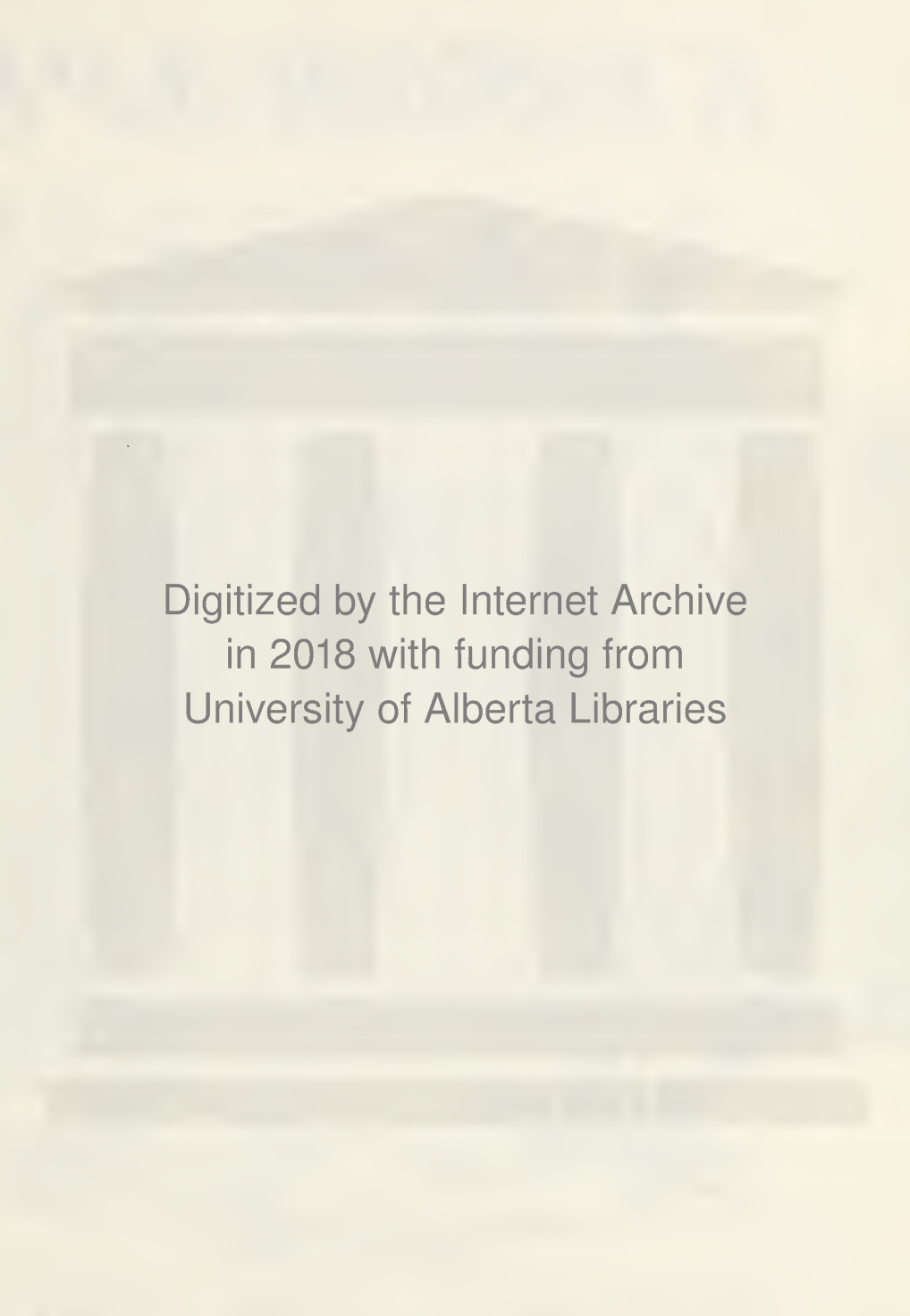
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# ***GEOGRAPHY***



**W. J. GAGE & CO., LIMITED**

# ***OF LANDS OVERSEAS***

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**GEOGRAPHY OF LANDS OVERSEAS** ★ A Book of the Gage Social Studies Series

**TORONTO**

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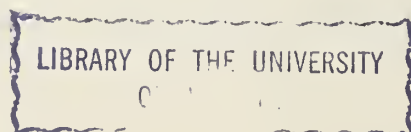
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# *To the Teacher*

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**Viewpoint.** At the elementary level the geography course should provide for the child a simple wholesome, realistic understanding of the world and of the people who live in it. That is the major purpose of this book. It treats the lives of peoples in regions removed from the child's actual experiences but it consistently provides for comparisons between the child's own community and the community studied—wherever it may be. In this study the child acquires a sympathetic understanding of how other people live, of the similarity of their essential needs to his own, and of the naturalness of their different ways of supplying those needs. Today all men and all regions are interrelated. Hence we must make the whole world our subject and relate to it each region studied.

Throughout the world the environment, particularly the social environment, is always changing. In recent years these changes have been tremendous. Nowhere in the world is there any longer a truly isolated region. Since this is true a new viewpoint and a new organization of materials is necessary in the teaching of geography. We are concerned with the way people live, the way they behave, the reasons why their behavior patterns are as they are, and why these are changing. Hence this book gives major attention to regions, within the confines of each of which patterns of living are similar.

**Objectives.** This course in geography should enable the child to apply to lands overseas the understandings developed and applied in his previous study of geography. In addition it should develop these major understandings and abilities:

1. All people everywhere live natural lives. They seek the necessities of life in ways that are influenced by their environment and by their past experiences and present abilities. Ways that seem strange to us are natural and sensible to them.
2. All peoples everywhere are interdependent.
3. Maps are tools of general interpretation. The ability to find and use maps that are helpful should be developed.
4. The ability to perceive relationships and understand principles should be extended from the specific situations under which they developed to general situations, wherever they are significant.

**Content.** The content of this book includes the geography of Europe, Africa, Asia, Australia, and Pacific islands, and provides a review of the study of other parts of the world in relation to these lands.

The introductory section of this text sets up a viewpoint and a method of approach for the book as a whole. It has these purposes:

1. To relate the pupil himself and his own experiences to the world he is studying. What he knows from direct experience in his own community is the starting point. He learns that all parts of the world are interrelated in every aspect of environment and culture.
2. To provide the pupil with the basic map equipment that will be needed in the year's work.
3. To develop an appreciation of other peoples and their contributions to world culture. As the Honorable L. B. Pearson has said: "In establishing good international relations with other countries, education based on truth, tolerance, and understanding is our only hope."
4. To initiate world understanding. This section gives the pupil some basic concepts which he needs for considering the world as a whole. As he studies the various regions of the world in later sections, he should begin to see them as a great world pattern. To develop such a viewpoint is to make a beginning in world understandings.
5. To serve as a guide for the year's work. One aspect of this guidance has been covered under 4.

The Study Guides in the introduction are not for that section alone. They give continuity to the entire year's work, and should be used at the beginning of the study of every region. The map-reading activities, too, should be reviewed at the beginning of each section, for the light they throw upon the region to be studied. Many of the basic understandings are included in these exercises.

The succeeding sections of this book apply to lands overseas the general understandings presented in the introductory section, and also those acquired in previous study. The unusually simple textual material provides a source from which the pupil can get the information necessary to carry out interesting and useful activities. It also provides a stimulus toward the intelligent use of the excellent and abundant visual materials.



**Gradation.** In the preceding texts of this series, major geographic understandings were built up one by one with infinite care and in meaningful situations. In the study of the many and unfamiliar lands and peoples presented in this book, only the limited number of additional concepts necessary to understand the new situations encountered have been added. The increased maturity of treatment is found not in more difficult subject matter, but in the employment of a more mature method of handling it. Since this text is designed to give the pupil experience in organizing his own knowledge, it is essential that he have simple materials with which to work.

**The maps.** The map equipment in this book is unique. Particular attention is invited to the twenty-four consecutive pages of maps, pages 10 to 33.

Here, in one place and easily found, are the maps that will be used constantly throughout the year. This grouping of maps provides an initial experience in the establishment of the atlas habit. As the year's work progresses, the pupil is expected to make more and more use of these maps on his own initiative. He should learn to use them whenever he needs them. Learning to *use* maps as needed, not merely *how* to use them, should be one outcome of the study of geography.

Another innovation is the inclusion of maps of Canada and of North and South America in a study of the world outside the Americas. If a pupil is to build on his previous learning, he needs these maps for comparison.

A third innovation is the use of color in maps other than physical and political maps. The publishers have provided these costly maps because of a belief that their data are more easily understood than when presented on black-and-white maps.

A fourth innovation is the inclusion of a world growing-season map. The information on which it is built is not easily available. This map is provided in the belief that the length of the frost-free season is a geographic factor fully as important in the study of the rest of the world as it is in the study of Canada.

In spite of these innovations, no type of map in this atlas section is new. The pupil has had physical-political, rainfall, growing-season, vegetation, and population maps before. Here he is given new experience with them. He learns to read their data in terms of world patterns.

Consistent with the viewpoint of studying the world as a whole and providing opportunity for constant comparisons, production maps, each of which covers all overseas lands, have been provided. Their comprehensive coverage and their extreme simplicity make them especially suitable for use at the elementary level.

**Geography workshops.** The workshop is an integral part of each section. Teachers and pupils should examine the workshop carefully before the unit of work is begun. Some of the suggested activities will be most useful if they are started at the beginning of the section and continued through the entire study. Every study guide carries through to the workshop and is recognized in one or more of its activities. The Roman numerals at the ends of the questions in the study guides refer to related workshop activities.

The workshops have the following functions:

1. Testing. Each workshop has one or more objective tests upon some of the more concrete or factual aspects of the preceding work.
2. Guidance. The activities should be examined carefully at the beginning of each section. They help to relate the new section to what has gone before, and they guide the child in selecting pertinent facts and relationships.
3. To provide experience in geographic interpretation. In every workshop pupils are asked to use their knowledge of geography in interpreting pictures, current events, and local community activities.
4. To relate the pupil's own community to the world. The workshop at the end of section one guides the pupil to a better understanding of his own community. Succeeding workshops help him to use community resources to understand remote parts of the earth. At all times the workshops keep before the pupil the realization that his own community is part of the world and related to its most remote regions.
5. To provide for individual differences. Interest and ability should determine the selection of activities, the amount of time spent on each one chosen, and the goals reached. The workshops provide activities in which all pupils can find a place. The most limited will find something to do that gives them a satisfying sense of achievement. The most gifted will find interesting problems to challenge their talents. The range is wide enough to provide an outlet for any special abilities that may be found in the class.

Throughout the workshops there is abundant opportunity for pupils to exercise initiative. They should not, however, wander away from the major objective: a simple understanding of the world in its geographic aspects, on the level of maturity expected of a pupil of that grade level.

In a country like Canada, especially, the teacher should emphasize not only our own just pride in our own achievements, our confidence in our own destiny, our determination to build up a united people. He should also emphasize the inescapable inter-relationship between Canada and other countries. For no country in the world is this inter-relationship more important. Our experience in the past proves this. Developments in the future will drive it home, both in the economic and the political field. For Canada, therefore, as much as for any country in the world, a sound and understanding knowledge of other countries, of their history, their problems, and their possibilities is essential. Only on such knowledge can peaceful and progressive international relations be based.

THE HONORABLE L. B. PEARSON  
Secretary of State for External Affairs









## *Exploring Your World*

### WHAT DO YOU KNOW ABOUT YOUR WORLD?

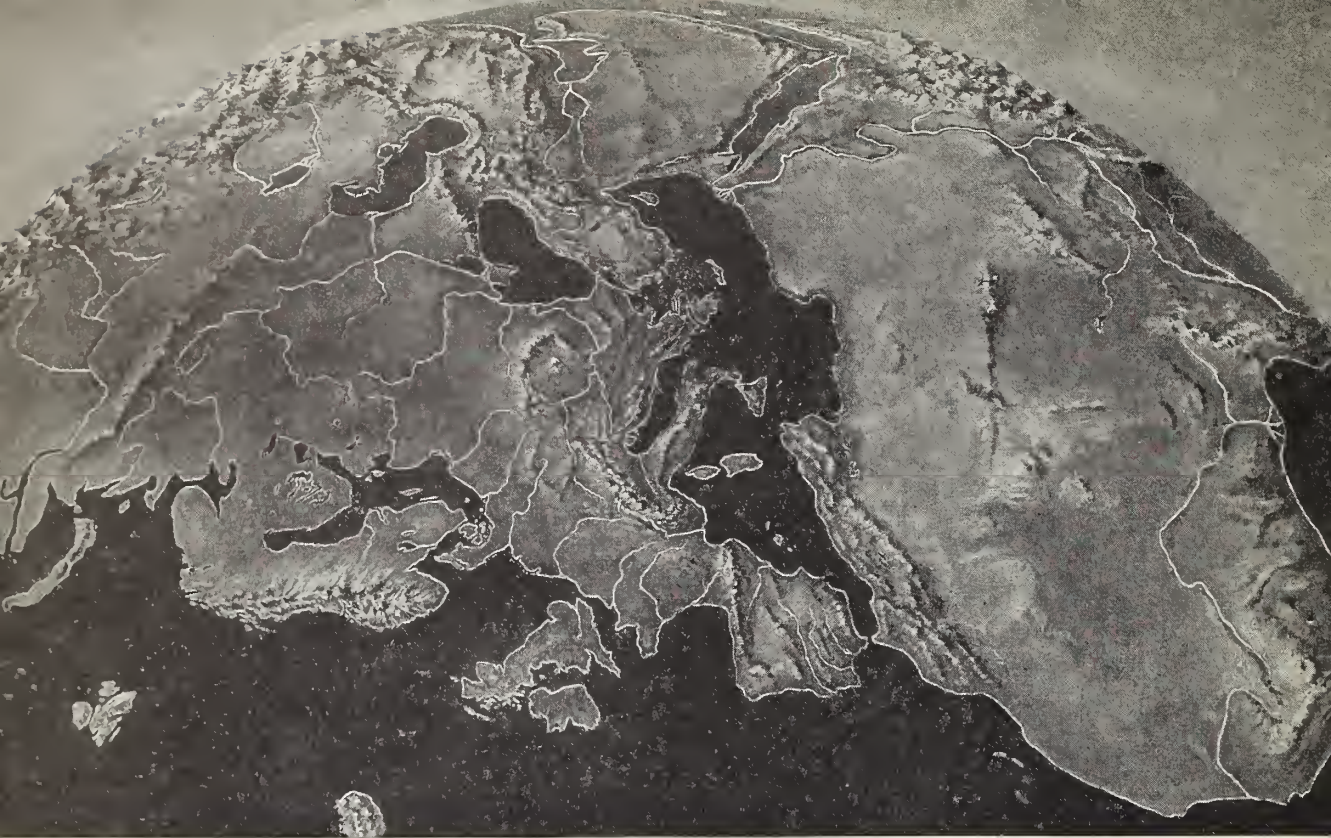
What part of the earth do you know best? Is it the land you see as you go to school in the morning? Is it your own yard or a field or a vacant lot near your home? In some small part of the earth, you know every tree and every change in the slope of the land. Then there is a larger area that you know almost as well. You can find your way about in it. You can describe it, even though you cannot give the location of every tree and every building in the area.

Perhaps you have travelled far from home. You may have ridden hundreds of miles in one day and caught glimpses of towns and farms as you passed them. Even the land you

have seen in passing is not entirely strange to you. You have been there. You have looked at it with your own eyes.

You can become familiar with parts of the earth that you have never seen. You can become acquainted with them by looking at pictures, studying maps, and reading. In this way you now know the whole of Canada because you have studied it carefully, region by region, in school.

**How large is the earth?** After you had studied our own country, you probably went on to the rest of North America and then to South America. The two continents stretch



Looking at the world this way, as a flyer going toward Europe might see it from very high up in the sky, you can see how Asia, Europe, and Africa are joined together in a single great mass of land.

from the Arctic regions almost to the Antarctic. Far as North America and South America extend, however, they reach only a little more than a third of the way around the world. In area, the world is twelve times as large as North America and South America together. Only two-fifths of the earth's surface is land, but the land area alone is three and one-half times as large as the Americas.

Now you are ready to get acquainted with this larger world. In the map above, you are looking across the continents of Europe and Africa toward Asia.

These three big continents make up the greatest land mass in the world. It includes almost three-fifths of all the land on earth. Most of your geography time this year will be spent in learning about these three continents and about the millions and millions of people who live on them.

**Ways of looking at the earth.** In the map you are looking eastward from Canada. Perhaps you have never used a map on which north was not toward the top. When you stop to think of it, though, you realize that you can look at the earth from any direction. When you hold a globe in your hands, you can turn it any way you wish. Any spot you choose can be the top. On the map above, the part farthest north is in the lower left-hand corner.

Most maps are drawn so that the north is toward the top. Sometimes you can understand the world better if you do not look at the world this way. Imagine that you are a member of the crew of a trans-ocean airplane. The crew of an airplane flying from Canada to Europe must think of the earth as it is shown on this map. Europe is ahead of them, Africa to the right. To the left, far away across the Arctic region, is Asia. If



they got far off their course, they might find themselves over either Africa or Asia instead of over Europe.

**The flyer's world.** There are times when directions, as shown by lines on a map, are not the most important things to know about the earth. For example, a flyer wants to know the shortest way to his destination. If he goes by the shortest possible route through the air, he cannot follow the direction lines on a map except in a few special cases. If his destination is directly north or south, his shortest route follows a north-south line on the map. If he is at the equator and his destination is directly east or west, his shortest route will be along the equator. Except in these special instances, he will change direction constantly as he flies. The following paragraphs will help you to understand this.

The shortest distance between two places on the earth is always part of a *great circle*. Any line drawn completely around the world so that it divides the earth into two exactly equal parts is called a great circle. The equator is a great circle. Any straight line you draw on the earth's surface from one pole to the other is half a great circle.

A great circle can be drawn through any two places on the earth. To understand this, you will need to try it for yourself on a globe. Select two places. Stretch a measuring tape or string along the shortest distance between them. Then follow the same line all the way around the globe. No matter what places you have selected, the circle that includes them will divide the globe into two equal parts. Prove that the equator is a great circle by choosing two places on the equator for measuring.

Find a number of great circle routes on the globe. Suppose, for example, that you were starting out to fly from Windsor, Ontario, to southern Italy by the shortest possible route. Would you expect to leave Windsor flying northeast? If you took the shortest route from Montreal to Paris,

France, you would leave Montreal flying northeast and arrive at Paris flying southeast. If you flew long enough on the same great circle you would reach the southeastern corner of the Mediterranean Sea near the Suez Canal. Then you would reach Montreal by flying far to the south of Australia.

**Flat maps of a round earth.** As you read this book, you will find many maps. Some of them will show you a small section of the world. Some will show you the whole surface of the earth. No part of a globe can be flattened without cutting or stretching or pushing together. Flat maps tell you things about the world that you could not see so well on a globe, but you should remember that they do not show you the earth as it really is. For example, you will use a vegetation map of the world. On it you will see a large area of northern cone-bearing forest in North America and another crossing Europe and Asia. Both lie mainly between  $50^{\circ}$  and  $70^{\circ}$  north latitude. If you remember always that the earth is a globe, you will be able to think of these areas as they really are. They really form a circle around the earth, broken only by the oceans.

The band of dark green on the vegetation map stands for more than just cone-bearing



forest. It stands for a circular belt of cone-bearing forest on a round earth. Learning to understand map symbols in this way is part of learning to read world maps. On the world maps on pages 12 to 17 you will see symbols for rainfall, growing season, and vegetation as irregular bands of color running across the maps. You will need to think of them as they would be on a globe. Only by thinking of climate, vegetation, and people on a round earth can you ever really learn to know the world you live in.

## From the Americas to the World

When you studied North America, you learned much more than mere facts about Canada and the neighboring countries. You learned to read maps easily. You learned that altitude and distance from the equator influence rainfall and growing season, that rainfall and growing season influence vegetation, and that all these things influence density of population and the way people live.

**Regions that are alike.** You will find the rest of the world easier to understand because of your study of American regions. You learned that high mountains have a cooler climate than lowlands in the same latitude. That is true everywhere. In South America there are heavy rains and thick forests in the Amazon Valley. You will find about the same things in lowlands along the equator all around the world.

You learned also about the region of the Canadian West in which the natural vegetation is grass. The moister part has become the greatest grain-producing region of the country. Thousands of cattle and sheep graze in the drier part. In Europe, Asia, Africa, and Australia you will find grasslands used in the same way.

The two pictures at the top of the facing page were taken in great grain-producing regions. The first picture shows two

Canadians combining wheat on a farm near Lethbridge, Alberta. In the other picture a farmer in southeastern Australia is also combining wheat. The wheat being harvested in the first picture is spring wheat. Like most grains it is planted in the spring and produces its crop the same year. In many places like eastern Canada and Australia, however, wheat is sown in the autumn and ripens during the following summer. In Canada's prairie provinces the growing season is too short for many varieties of wheat. Perhaps you have learned what Canadians have done to overcome this difficulty. They have developed the famous "Marquis" and other new varieties of wheat that grow to maturity in a very short time. As a result, in Canada we are growing wheat farther and farther north. The Australians, too, have developed new varieties of wheat like their "Federation" variety that will grow well in a warmer and drier climate than we have in Canada's wheat regions.

The next two pictures were taken in mixed farming regions. Here the farmers do not specialize in one crop like wheat, but grow many different kinds of crops. Here, too, they raise many farm animals. In these two pictures you see dairy cattle eating grass or resting in the shade. The first of the two pictures was taken near Kingston, Ontario. The picture on the right was taken not far from Cape Town in South Africa. If you look carefully at the picture you may see hundreds of egrets or tick birds. In South Africa whenever you see a herd of cattle, you will usually see these birds not far away.

The picture on the left at the bottom of the page shows Canadians loading hay near Sackville, New Brunswick. The picture to the right of it shows two men haymaking near the Wicklow Hills in Ireland. The moderate climate of both these regions combined with plenty of rain enables the people in these regions to grow an abundance of hay.

In all the pictures you can understand what people are doing and why. You understand what they are doing because you have





*The National Film Board*

The two regions pictured here are thousands of miles apart, but notice how much alike they are.



*The Australian High Commissioner*



*The National Film Board*

These two pictures were also taken in regions that are thousands of miles apart.



*The High Commissioner for the Union of South Africa*

One of these pictures was taken in New Brunswick; the other in Ireland. Which is which?

*The National Film Board*



*Embassy of Ireland*





learned how such work is done at home. Thus what you already know about geography becomes a tool. You will use it to help you understand other parts of the earth.

**A name for the world around you.** Each pair of pictures shows two places that have about the same *natural environment*. Your environment is everything around you that influences your way of living. It includes climate, altitude, surface and soil, plants and animals, bodies of water, and mineral resources. Such things make up your natural environment. Your environment also includes other people and the things they have made, from a piece of furniture in the house to a great dam that provides water for irrigating an entire river valley. These are called your *social environment*.

Environment influences the lives of people in two ways. First, it offers them the opportunities to do certain things, and, second, it keeps them from doing other things. If there is a bathing beach near you, you can go swimming. You cannot go swimming unless a place to swim is part of your environment. A farmer cannot raise corn unless the climate is warm enough for corn. Coal can be mined only where there are deposits of coal. When possible, it pays to build factories where power, raw materials, and markets are within easy reach.

Some environments offer a greater variety of opportunities than others. For example, a farmer who lives in a region with a frost-free season six months long and a rainfall of 40 inches has a choice of many crops. One who lives in a region with a frost-free season of four months and only 20 inches of rain has much less choice. He may, however, become a very successful wheat farmer.

The pictures on page 7 were chosen to show you that people who live in similar environments often do the same things. They do not always use their environments in the same way, however. Even in the pictures you can see differences. As you read on in this book, you will learn that sometimes

people have quite different ways of living, although their natural environments are much alike. You will also learn that over wide areas made up of many regions and many kinds of environment the people have some of the same ways of living. Finding reasons for these likenesses and differences makes the study of geography interesting.

**Study guides.** As you read this book, you will find that some of the things it tells you are much more important than others. The most important things are those that help you understand the world and its people.

There are also many small details in the book. They are there to help you as you read, so that you will know how places look and will see clearly what everything means. Often there are examples to help you understand what you have read. No matter how hard you try, you will not be able to remember all the details and all the examples. In every section of the book, therefore, you will find study guides to help you recognize what is most important to remember.

The list of questions below is the first set of study guides. These questions will help you study, not only this section, but the whole book. Watch for the answers as you read. Whenever you find information that will help you answer one of the questions, you will know that it is something worth learning, and remembering. You will need the answers when you come to the Geography Workshop on pages 51 and 54. The numerals in parentheses at the end of each study guide refer to exercises in the Workshop.

Turn to the Workshop before you go on and read what it suggests that you do. Later, following the directions in the Workshop will help you to get the most out of your study of this section of the book.

1. What can you learn about the world from the study of maps? (II, III)
2. How does environment influence ways of living and working? (I)
3. How are different regions of the earth related to one another? (II)

4. How has the kind of civilization that developed in western Europe influenced the rest of the world? (V, VII)

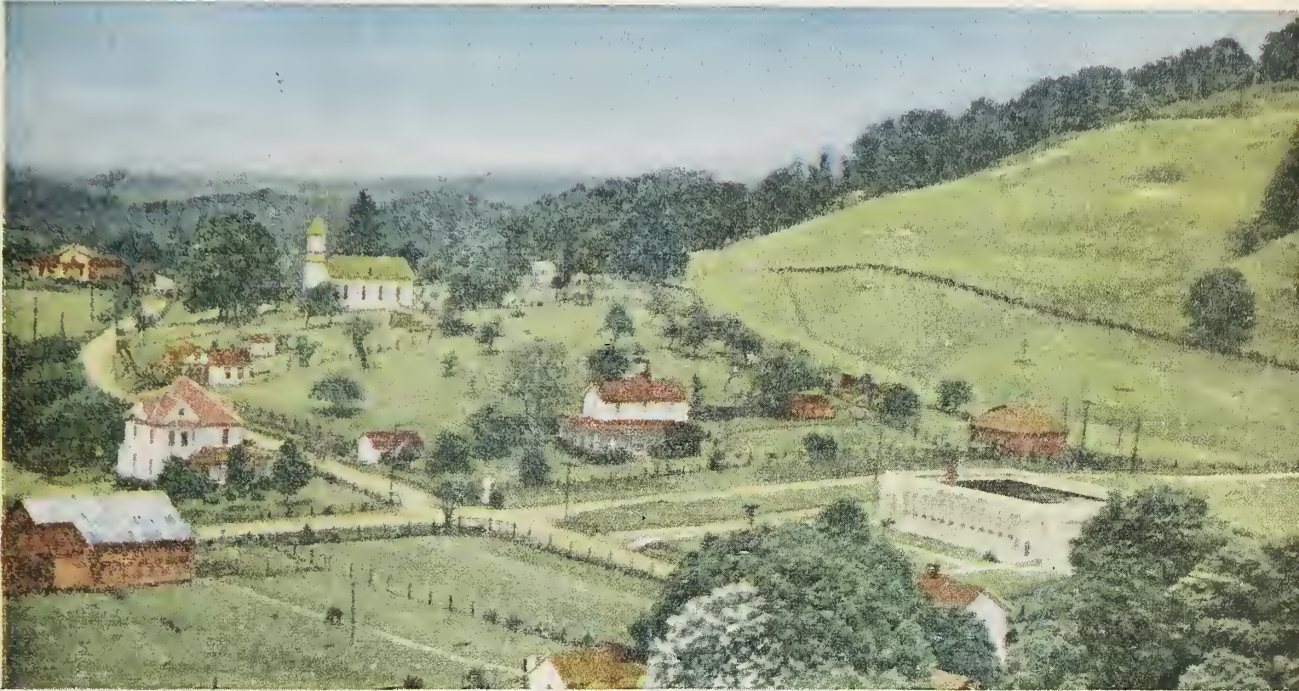
5. How are ways of living and working influenced by what people have learned and what they have done in the past? How have people learned to make better use of their environment? (I, VII)

6. How does this section of your book help you to understand what you read in the newspapers and magazines? (IV)

7. Why are some parts of the earth much more densely populated than others? (VI)

8. How does your study of this section help you to know your own community? What can you learn in your own community to help you understand the world? (I)

9. What is the meaning of each of the following terms: great circle, social environment, natural environment, hemisphere, meridian, longitude, civilization, race, migration, industrialized, political? (VIII)



*Ewing Galloway*

What features of the natural environment are shown? Can you list ten features of the social environment?

## WHAT WE CAN READ FROM MAPS

As you use this book you will see many maps. All but one of the maps in the first group show features of the natural environment. The one that does not is the population map on pages 18–19. Population is a part of the social environment.

Look at the maps as you read these exercises. The map on pages 10–11 is a physical-political map of the world. It is drawn as if it were the surface of a globe peeled off and flattened out. It is cut through the oceans so that land areas need not be stretched much.

The maps on pages 12–19 show all the land areas in the world, but parts of the oceans were left out. This was done so that the map could have a larger scale. You do not need the oceans to understand the information given on these maps. Sizes vary according to the scale of the map. By comparing a continent on the physical-political map with the same continent on the rainfall map, you can see the difference in scale.

The rest of the maps show parts of the earth on larger scales.





A physical-political map of the world.

## CAN YOU NAME THEM?

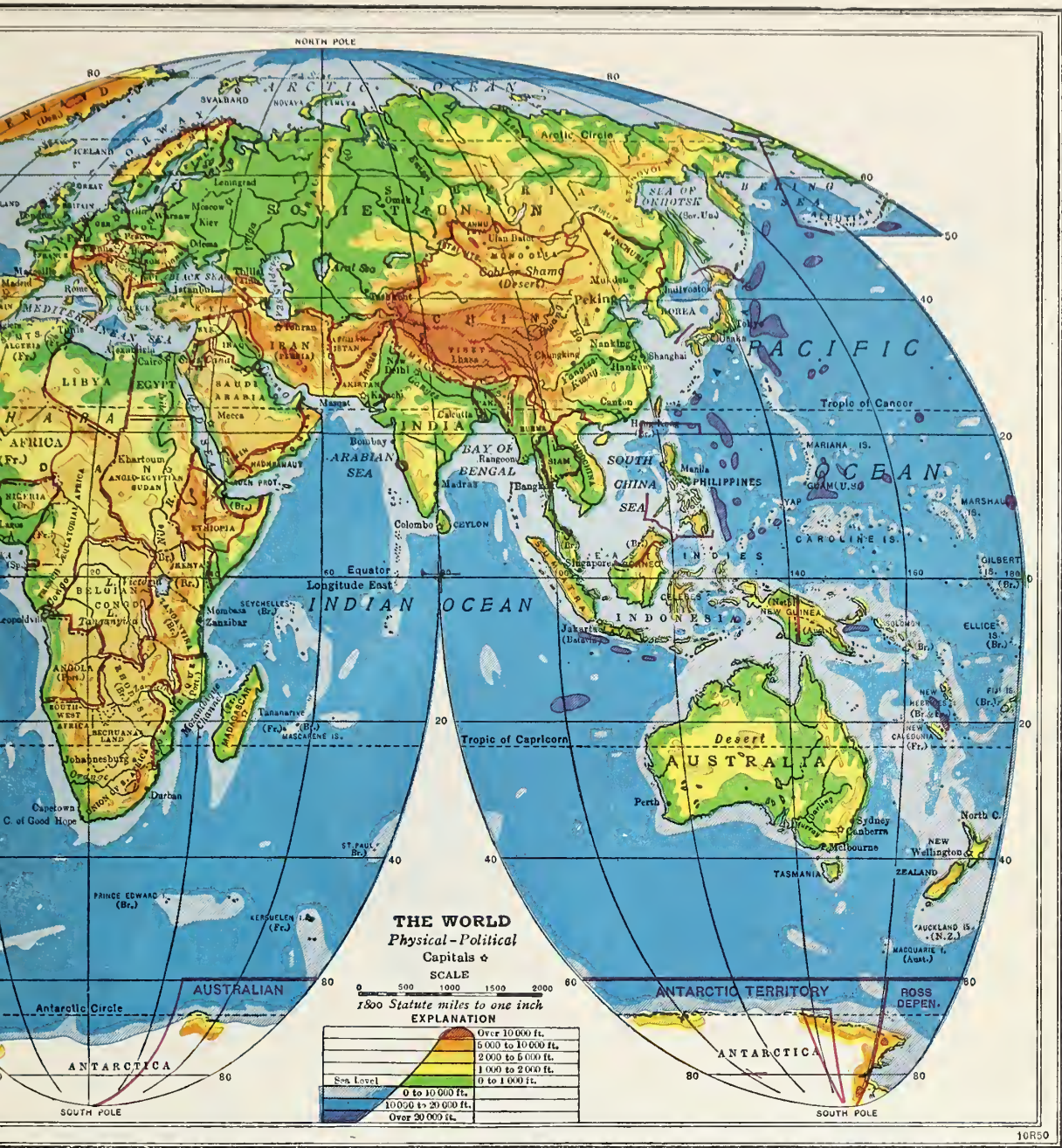
Make a list of the continents, according to the descriptions given below and on the following page. Use the map on these pages to help you.

1. A continent that might be called a peninsula extending westward from another

continent. It has mountains and seas to the south. On the north it reaches the Arctic regions.

2. A continent crossed by the equator. The greater part of the land is south of the equator. Highlands extend the entire length of the continent near the western coast, but much of the rest of the land is low.





Courtesy of University of Chicago Press

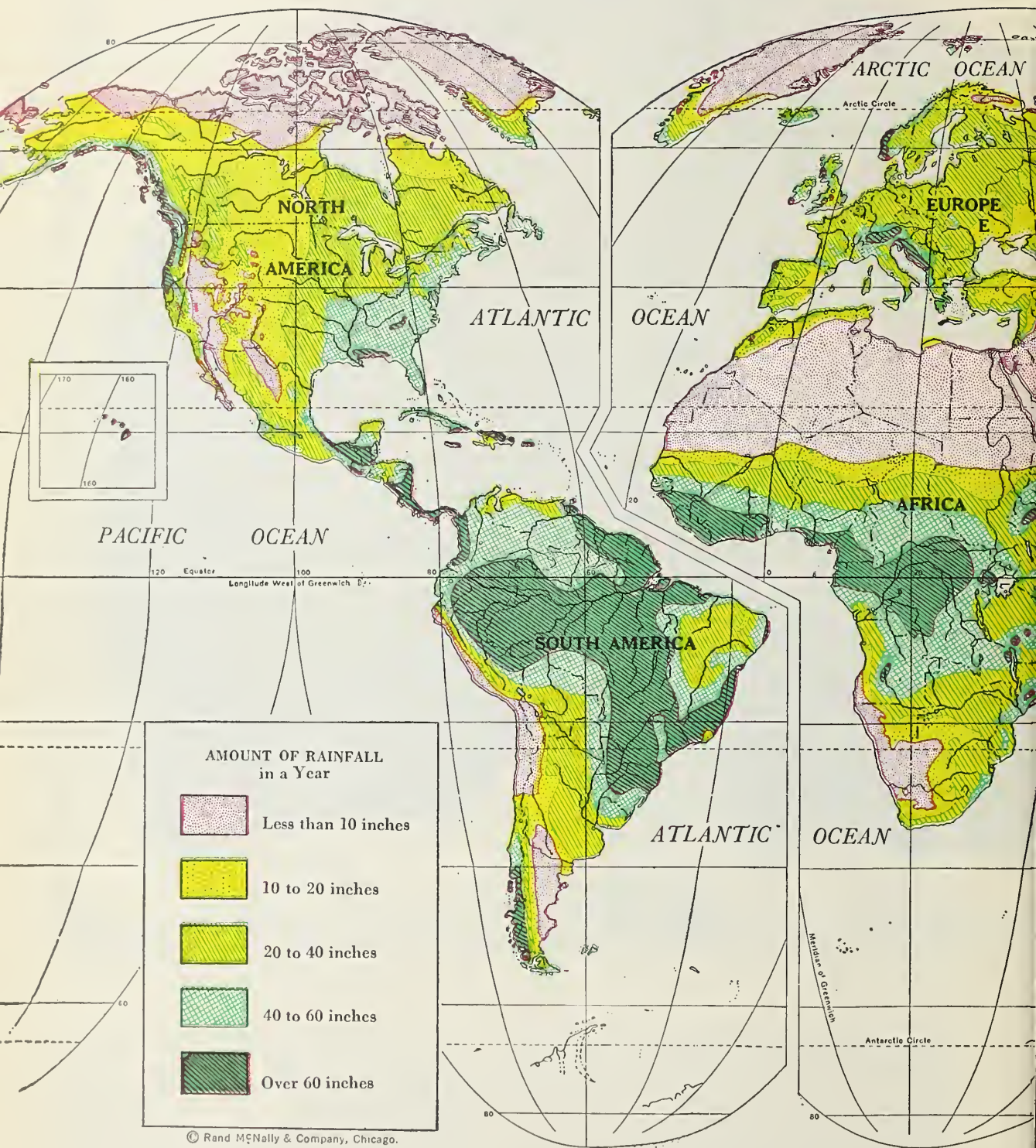
3. The smallest continent. It is the only continent entirely surrounded by water, and the only one that is entirely south of the equator.

4. The continent on which you live. It stretches from the Arctic regions to the tropics. The highest land of the continent is in the western half.

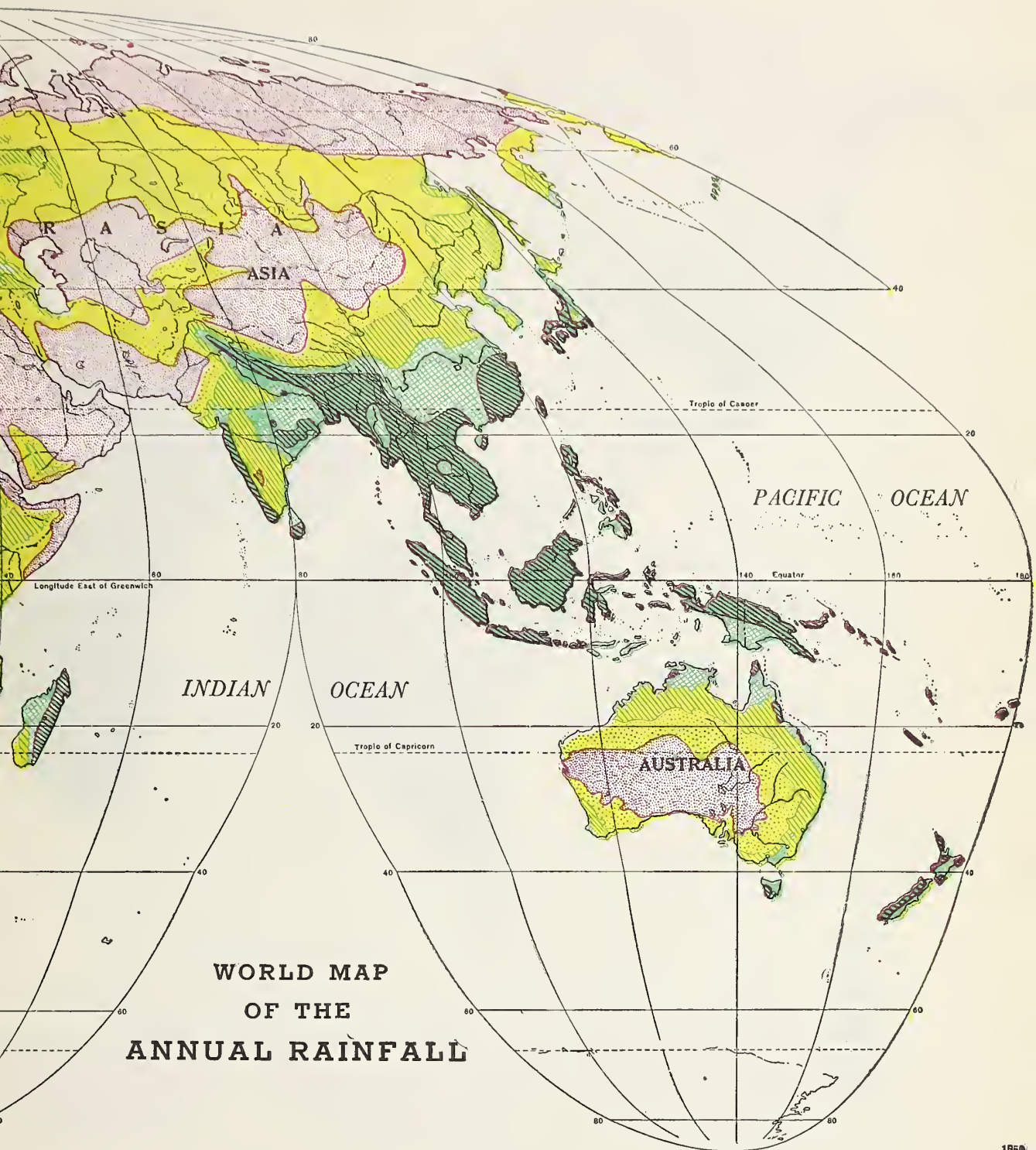
5. A continent crossed by the equator, with more land north of the equator than south of it. Nearly all the continent is more than 1000 feet high.

6. The largest continent. It stretches from north of the Arctic Circle almost to the equator. It has the world's largest area of land more than 10,000 feet above sea level.



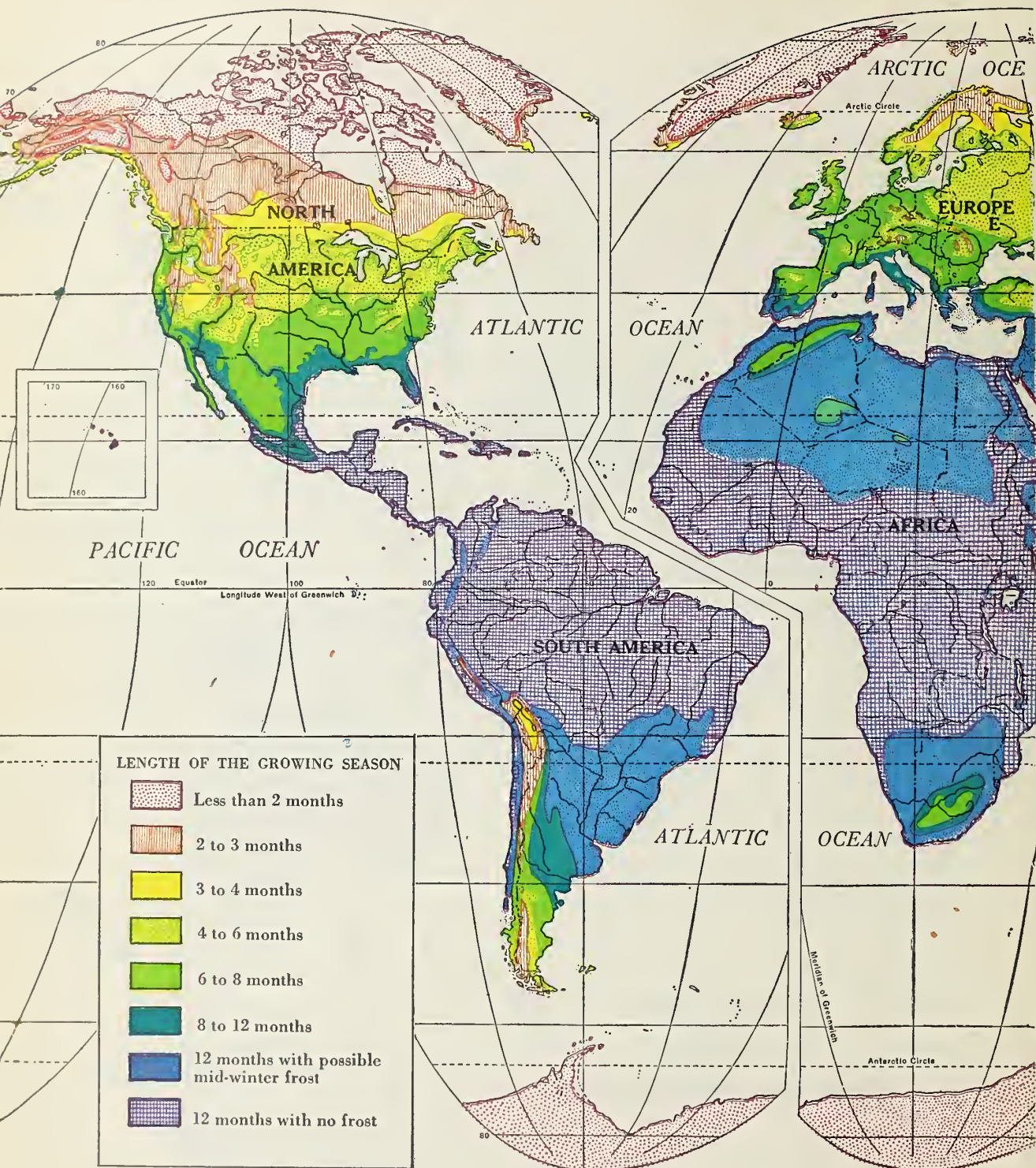






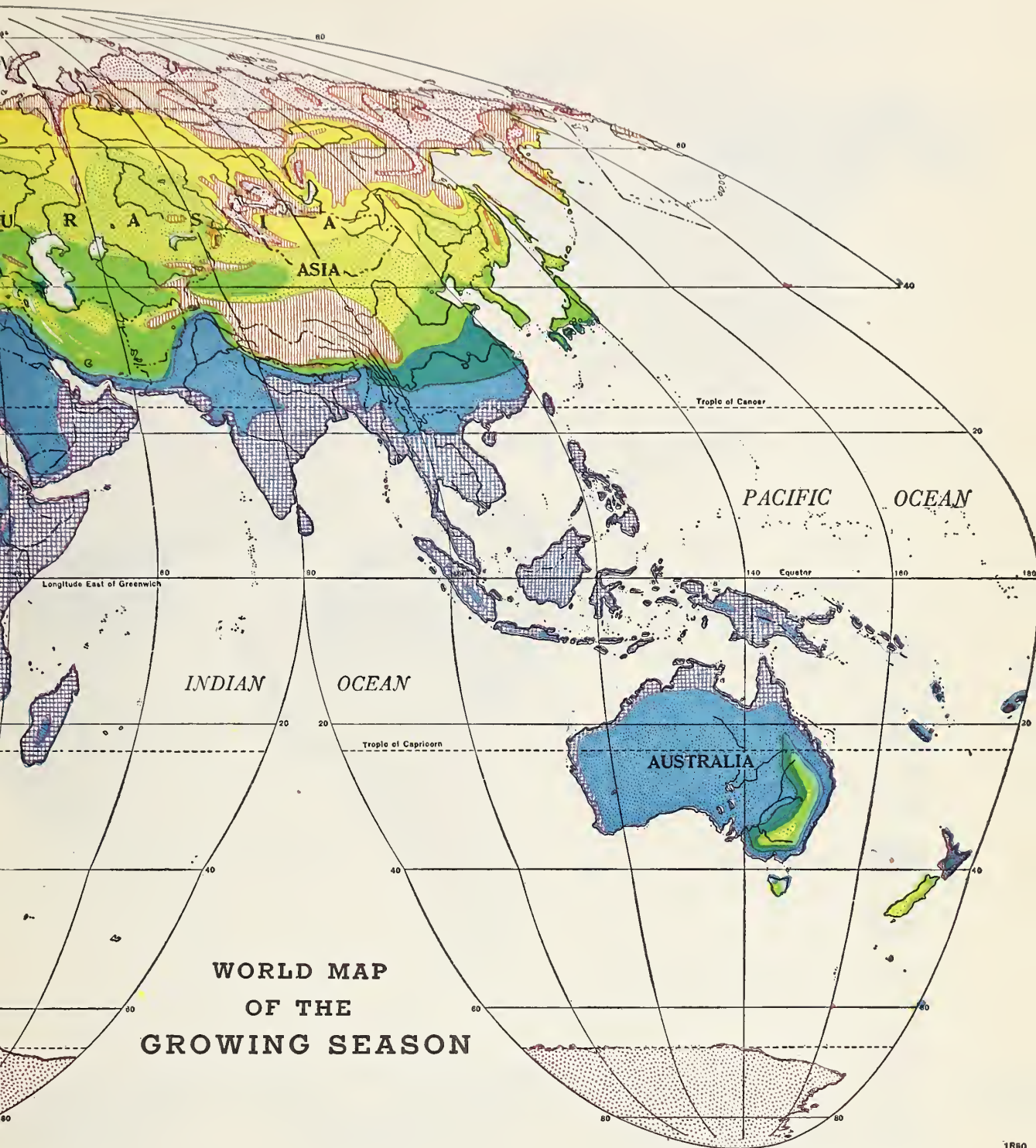
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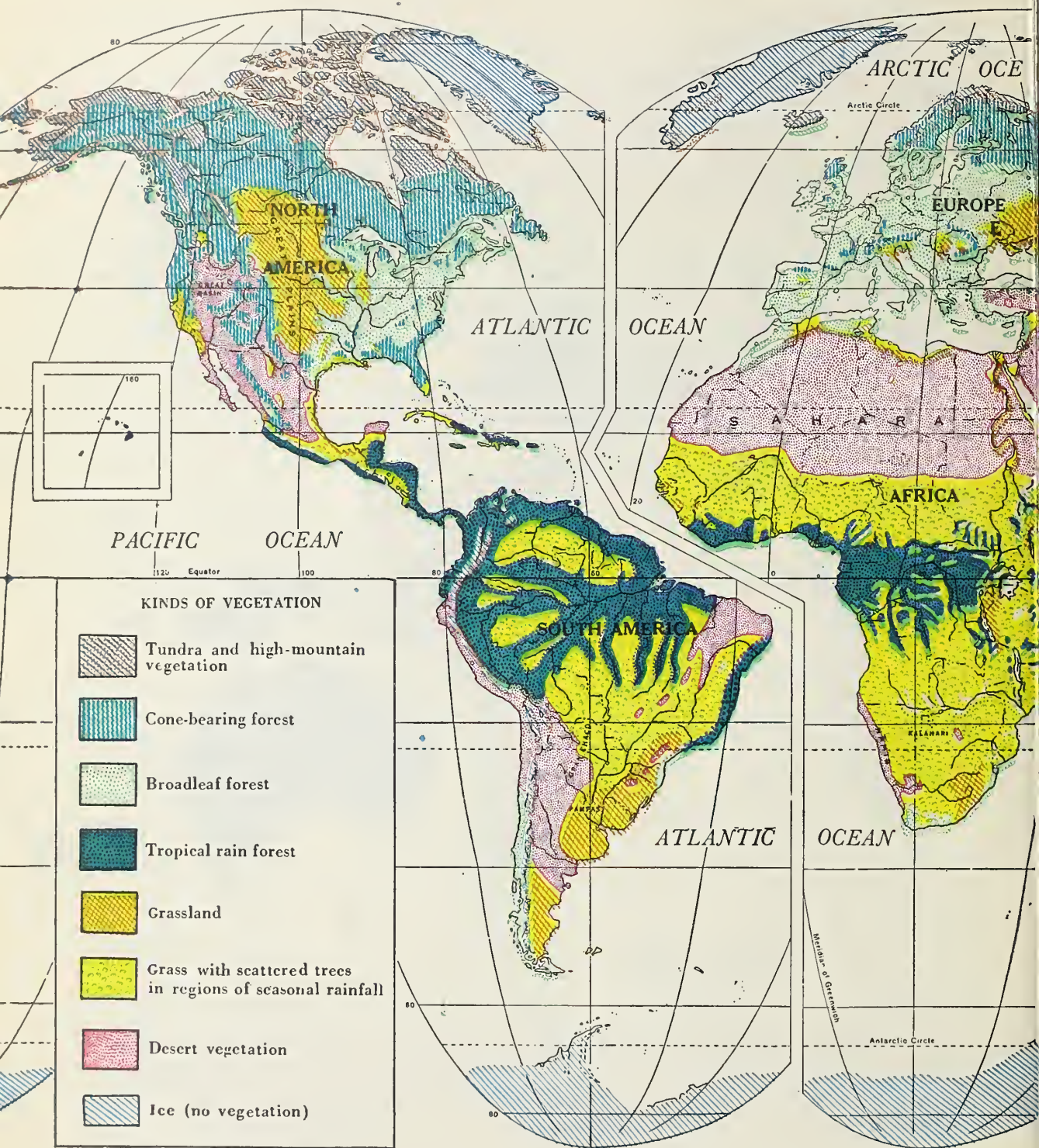


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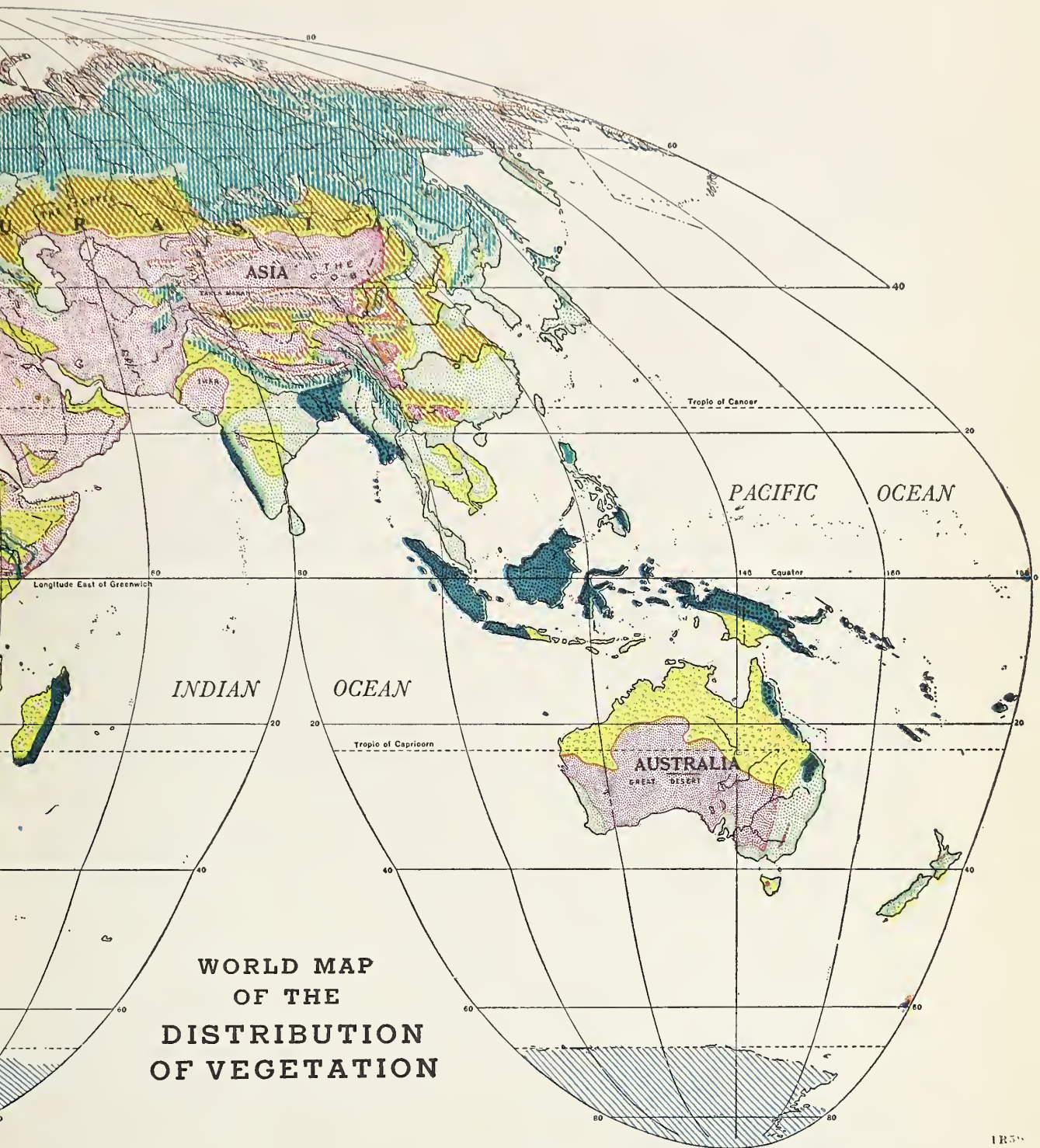


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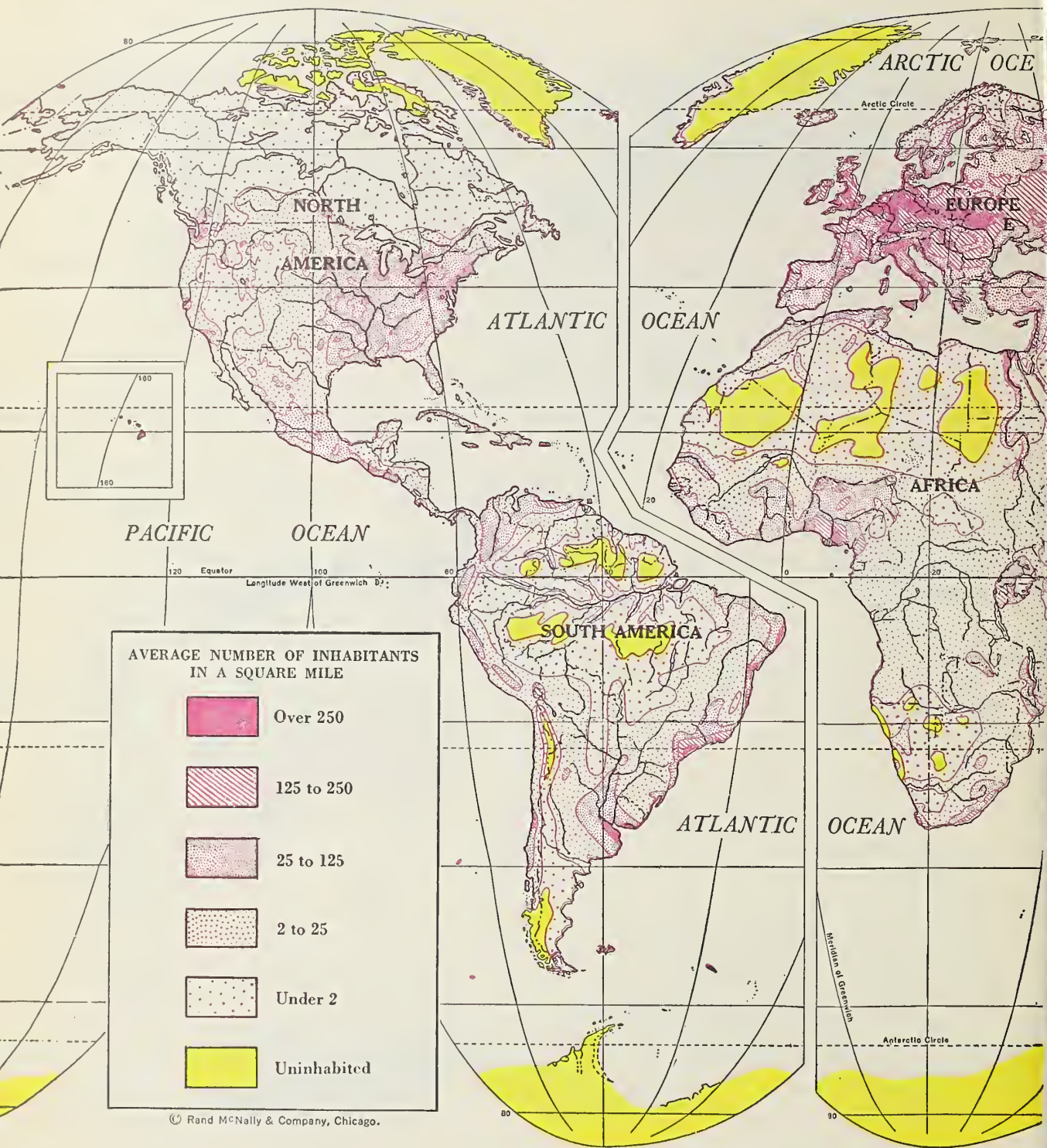


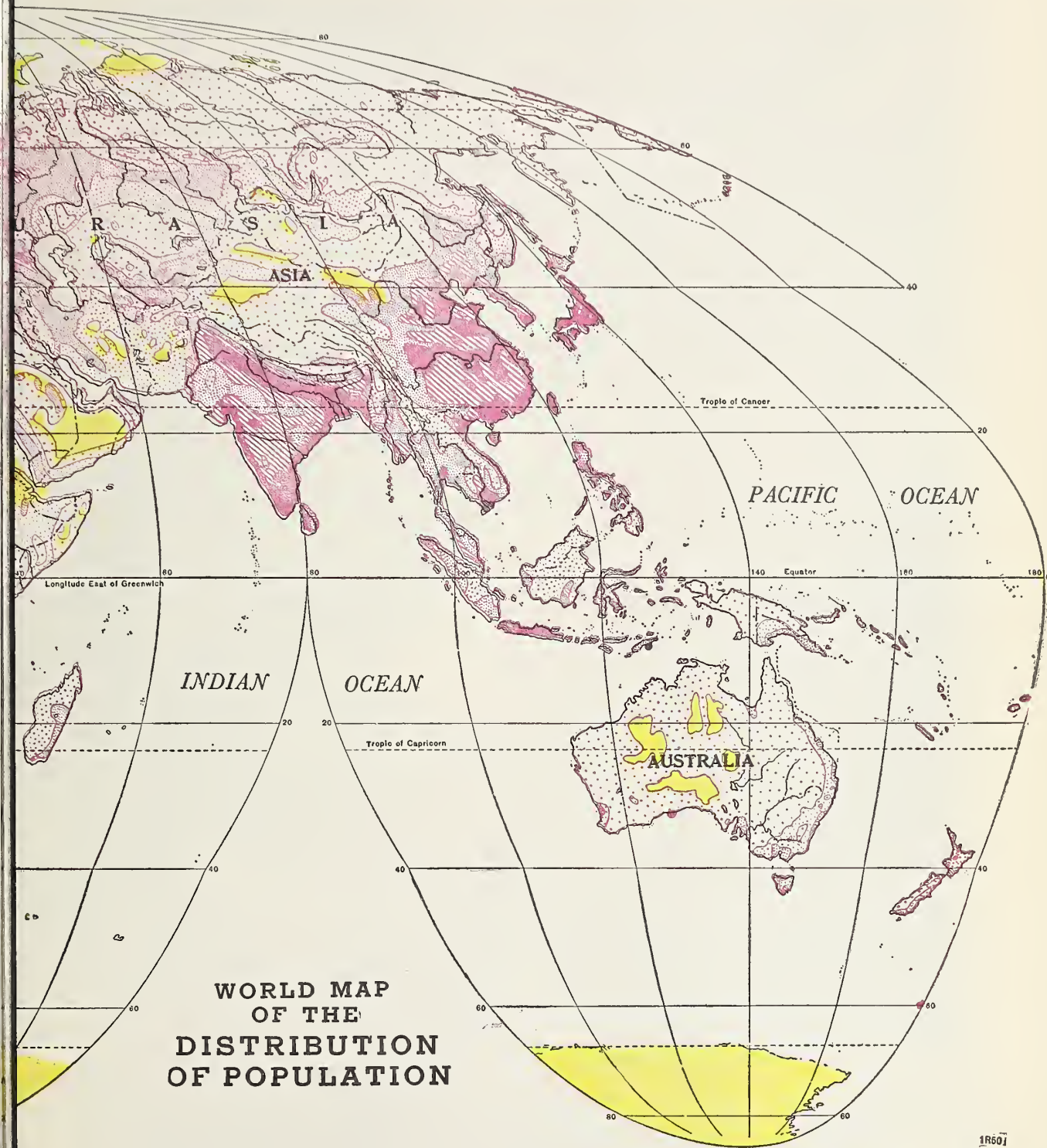


**WORLD MAP  
OF THE  
DISTRIBUTION  
OF VEGETATION**

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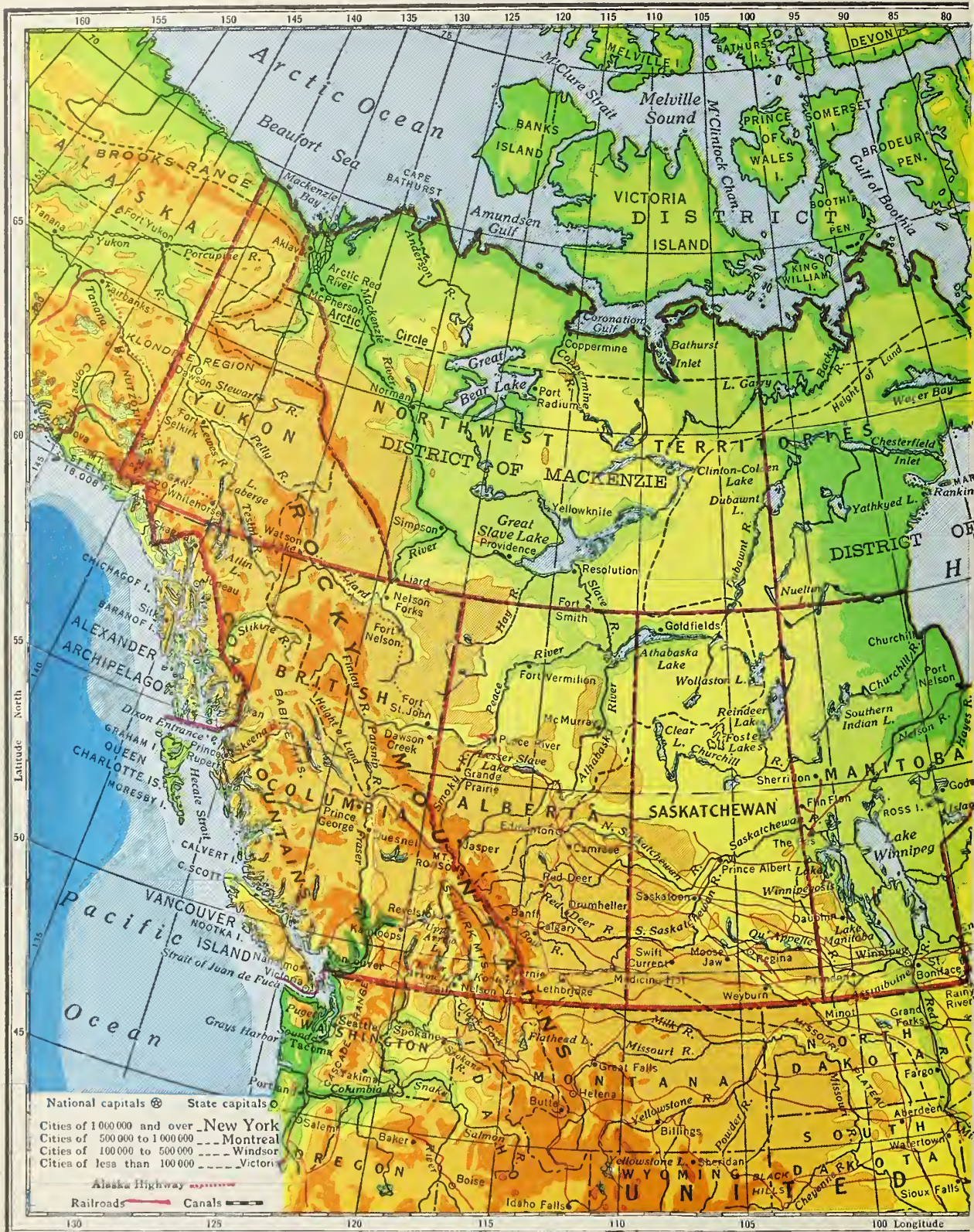






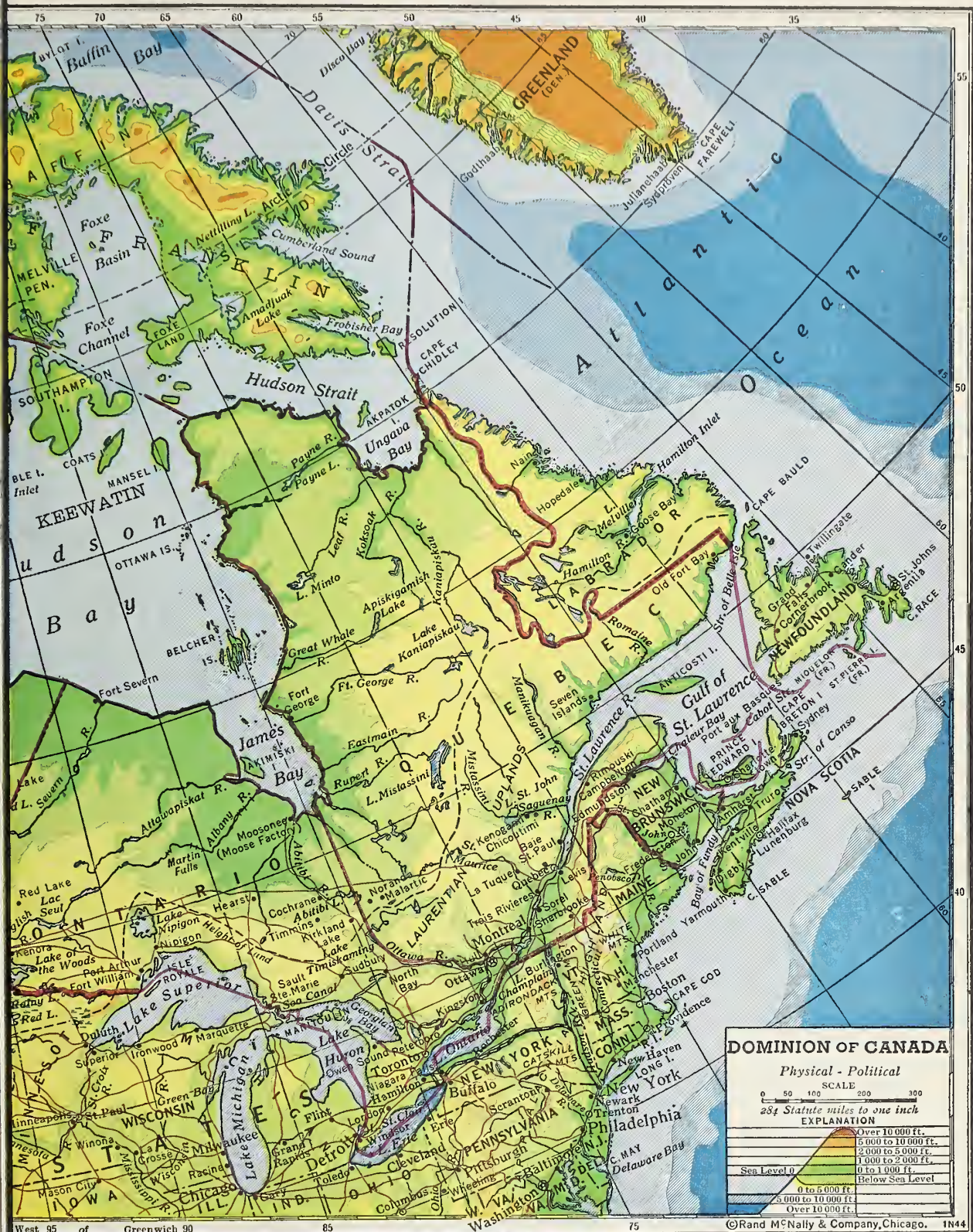
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A physical-political map of Canada.









A physical-political map of North America.



## YOUR HOME IN THE WORLD

On pages 20–21 you will find a map of Canada. At the left is a map of North America, your home continent. Using the scale of miles on each map, measure the distance, in miles, across Canada at the parallel of  $50^{\circ}$  north on these two maps and also on the world map on pages 10–11. About how long is the distance? Remember that you cannot expect to be completely accurate in measuring such a long distance on a map.

The Canadian map is drawn to a scale more than six times as large as the scale of the world map. Prove this by comparing the scales of miles and also the number of miles to the inch found in the keys.

### REGIONS TO FIND

Perhaps you know something of the rainfall, growing season, natural vegetation, and population of our own country.

On pages 12–19 you have maps that tell you about the rainfall, growing season, natural vegetation, and population of the whole earth. These regions are shown in color symbols on the map.

The population map may be a new kind for you. The colors tell you the average number of people to the square mile. If 1000 people live in an area of 10 square miles, then the average is 100 to the square mile. If 2600 live in an area of 10 square miles, the average is 260 to the square mile.

The game suggested below will help you learn to read the maps quickly. You are to find the five areas described. One is in northern Canada, one in western Canada, one in central Canada, one in eastern Canada, and one outside Canada, though still on the North American continent.

1. A region with 20 to 40 inches of rainfall, having a growing season 4 to 6 months long, broadleaf forest, and up to 125 people per square mile.

2. A region with less than 10 inches of rainfall, 60 days of growth, tundra vegetation, and fewer than 2 people per square mile.

3. A region between 1000 and 2000 feet in altitude, with less than 20 inches of rainfall, 3 to 4 months without frost, grassland vegetation, and up to 25 people per square mile.

4. A region less than 1000 feet in altitude, with 40 to 60 inches of rainfall, not less than four months without frost, having broadleaf forest, and from 2 to 25 people per square mile.

5. A region with more than 40 but less than 60 inches of rain, no frost at any time, tropical forests, and more than 2 but less than 25 people to the square mile.

If you thought this game was fun, you can add to it by describing other regions on the earth for your classmates to find.







A physical-political map of South America.



## THE WORLD, NORTH AND SOUTH



North and South America are connected by a long, narrow isthmus. It will help you to get an idea of the size of South America if you remember, as you look at the map, that the country of Brazil is as large as Canada without the Yukon Territory and British Columbia.

As you know, the equator crosses the northern part of South America. The equator divides the world into two equal parts. The part north of the equator is called the Northern Hemisphere, and the part south of the equator is called the Southern Hemisphere. Any round object, such as the earth or a ball, is called a sphere. The word *hemisphere* means half of a sphere.

You have learned that degrees of latitude are numbered north and south from the equator. About how many degrees north of the equator does South America extend? About how many degrees south of the equator does it extend?

Now turn to the map on pages 10–11. What other continent is crossed by the equator? What continent is entirely in the Southern Hemisphere?

Find South America on the rainfall map on pages 12–13. Is the rainfall light or heavy in lowland areas between the northern coast and the latitude of 30° south? How does it compare with rainfall in lowland regions farther from the equator? How does it compare with rainfall in lowland regions near the equator in other parts of the world?

You can never expect to find conditions exactly the same in two regions in different parts of the earth. Rainfall, for example, is influenced, not only by latitude, but also by altitude, wind directions, mountains, and distance from the ocean. You will learn more about the effects of such differences as you study the regions of the earth.

When you look at the growing-season map on pages 14–15, you see that latitude influences growing season even more than it influences rainfall. For example, you find a region with no frosts covering all northern South America except the high mountains. A belt of frost-free lands extends all the way around the earth at the equator.

You know about the forests along the Amazon in South America. On the map on pages 16–17 find the color symbol that stands for those forests. Where else do you find such forests? Between what latitudes, north and south, are they? How much rain is there? What is the altitude of most of the forest regions? How long is the growing season?

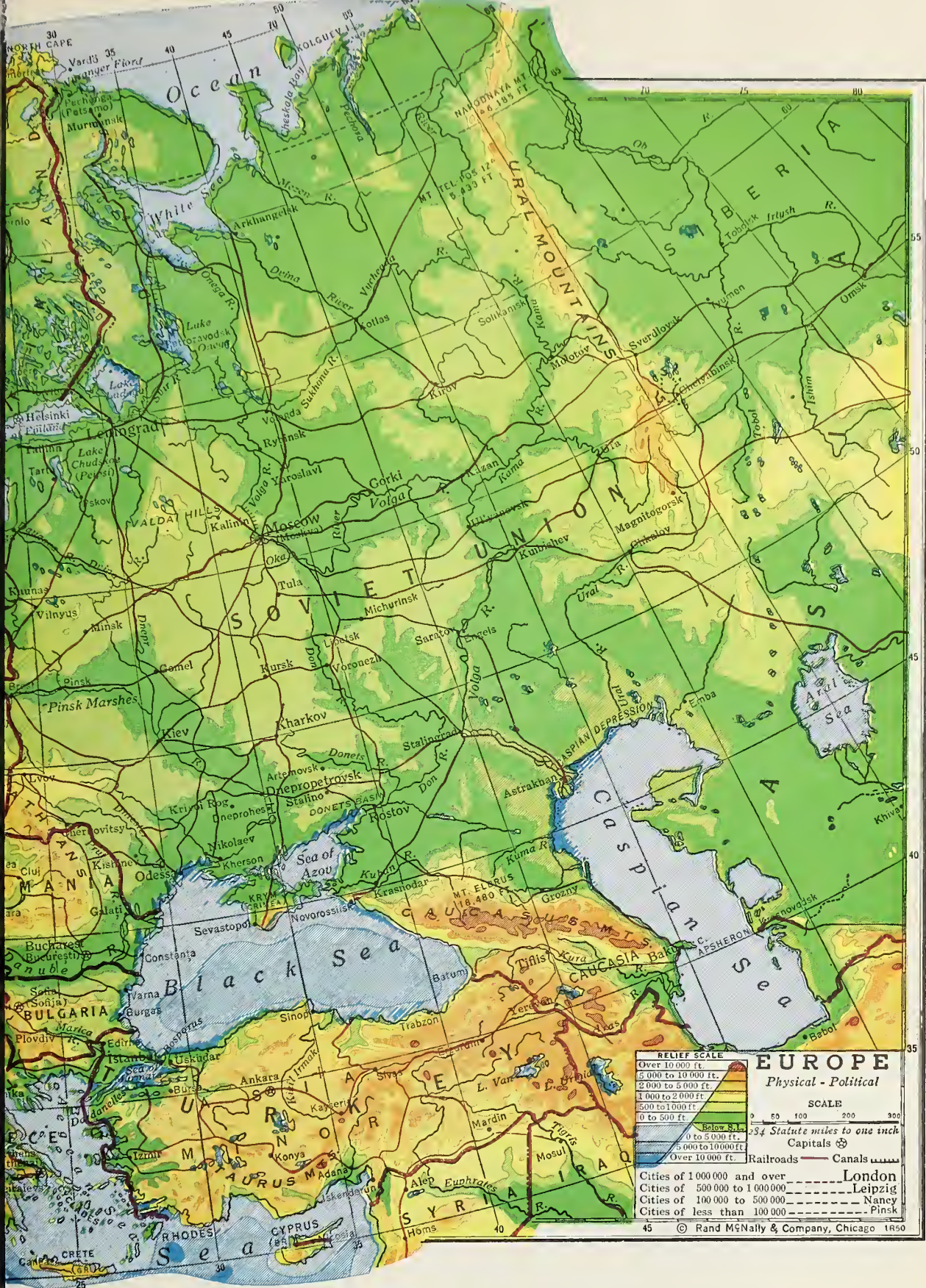
If you compare maps, you will see that vegetation everywhere depends upon rainfall, growing season, and altitude. Rainfall and growing season are influenced by altitude and latitude. In other words, rainfall, growing season, and vegetation depend upon one another and all depend upon latitude and altitude.



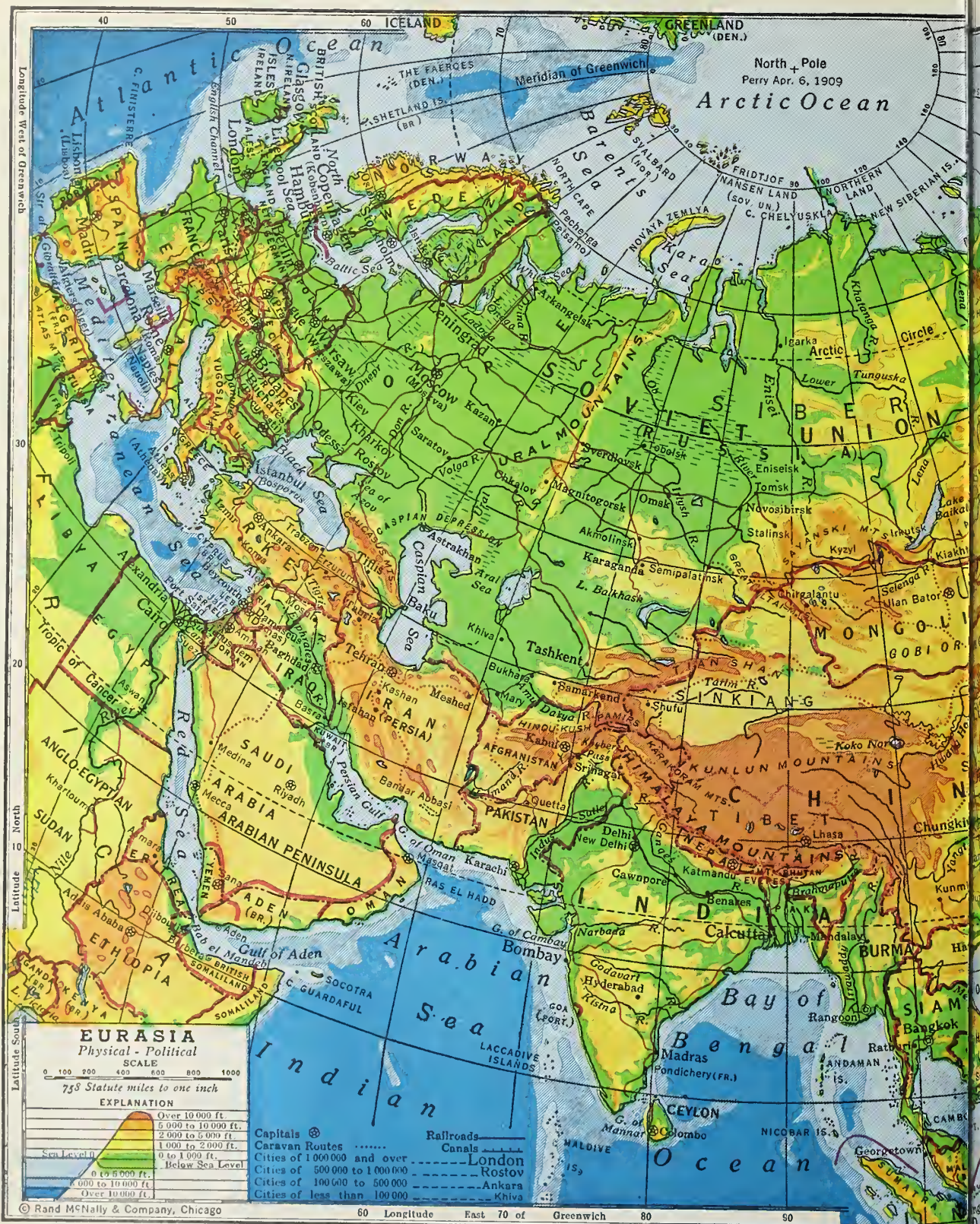


A physical-political map of Europe.









A physical-political map of Eurasia.





## DIRECTIONS ON THE MAP

At the left is a map of Eurasia. It is the largest body of land on earth, stretching halfway around the world. This great area is hard to show accurately on a flat map. The map maker drew the map at the left as if he were looking at a globe with the North Pole tipped slightly toward him. This means that you must follow the direction lines very carefully if you are not to get lost as you use the map.

Remember that north is always toward the North Pole. Starting in the middle of the map, move your finger straight toward the top of the page. In which direction are you going when you reach the uppermost edge of the map?

Find the city of Leningrad on the map. From it, move your finger straight south. Which do you touch, the Black Sea, the Caspian Sea, or the Barents Sea? If you wish, you may use the map on pages 26-27 to help you.

If you flew north from the Sea of Okhotsk, off the east coast of Asia, would you come to the Bering Sea, the Pacific Ocean, or the Arctic Ocean?

In which direction is the Arabian Sea from the Bay of Bengal? In which direction is the Black Sea from the Caspian Sea?

If you follow the right edge of the map, in which direction are you going when you come to the top of the map? In which direction are you going if you follow the left edge all the way to the top?

## DISTANCE EAST AND WEST

On a globe, the east-and-west lines are circles. They run all the way around. You know that they are called parallels, and that they are numbered north and south from the equator. The numbers stand for degrees of latitude.

To find direction north and south you have used lines that meet at the poles. These lines are called *meridians*. They show the east-west distance around the earth in degrees of *longitude*. Since the meridians of longitude meet at the poles, you can use them to measure east-west distance only in degrees, not in miles as you can with degrees of latitude.

As you know, a degree of latitude anywhere on earth is about 70 miles long. A degree of longitude is about 70 miles long on the equator, but nowhere else. North and south of the equator, the degrees are shorter. This is true because the meridians meet at the poles. The distance between them becomes less and less until they meet. The map on the left shows how the lines come closer and closer together, although they are not drawn all the way to the North Pole. A globe shows even more clearly how the meridians meet at the poles.





A physical-political map of Africa.





## WHAT IS A CONTINENT?

A great many years ago the Mediterranean Sea appeared to be the centre of the world. The people who lived on the shores of the sea had fine cities and well-cultivated farms. They wrote books. They built ships and traded with one another across the sea.

These people around the Mediterranean did not know the size of the earth. They did not know that the Americas existed, or Australia. They knew that land stretched far to the north, east, and south. People lived on this great expanse of land. Still, the people around the Mediterranean knew of no others who lived as well as they did. For them, only the lands around the Mediterranean really counted.

To people on the shores of the Mediterranean, the world seemed to be divided into three parts. The land toward the north they called Europe. The land toward the east they called Asia. The land toward the south they called Africa. We still use these names. We speak of three continents, although we know that there is no separation between Europe and Asia and very little between Africa and Asia. For example, find Africa on the map on pages 16-17. There you see how one great region of desert vegetation stretches across both of these continents all the way from the west coast of Africa to eastern Asia.

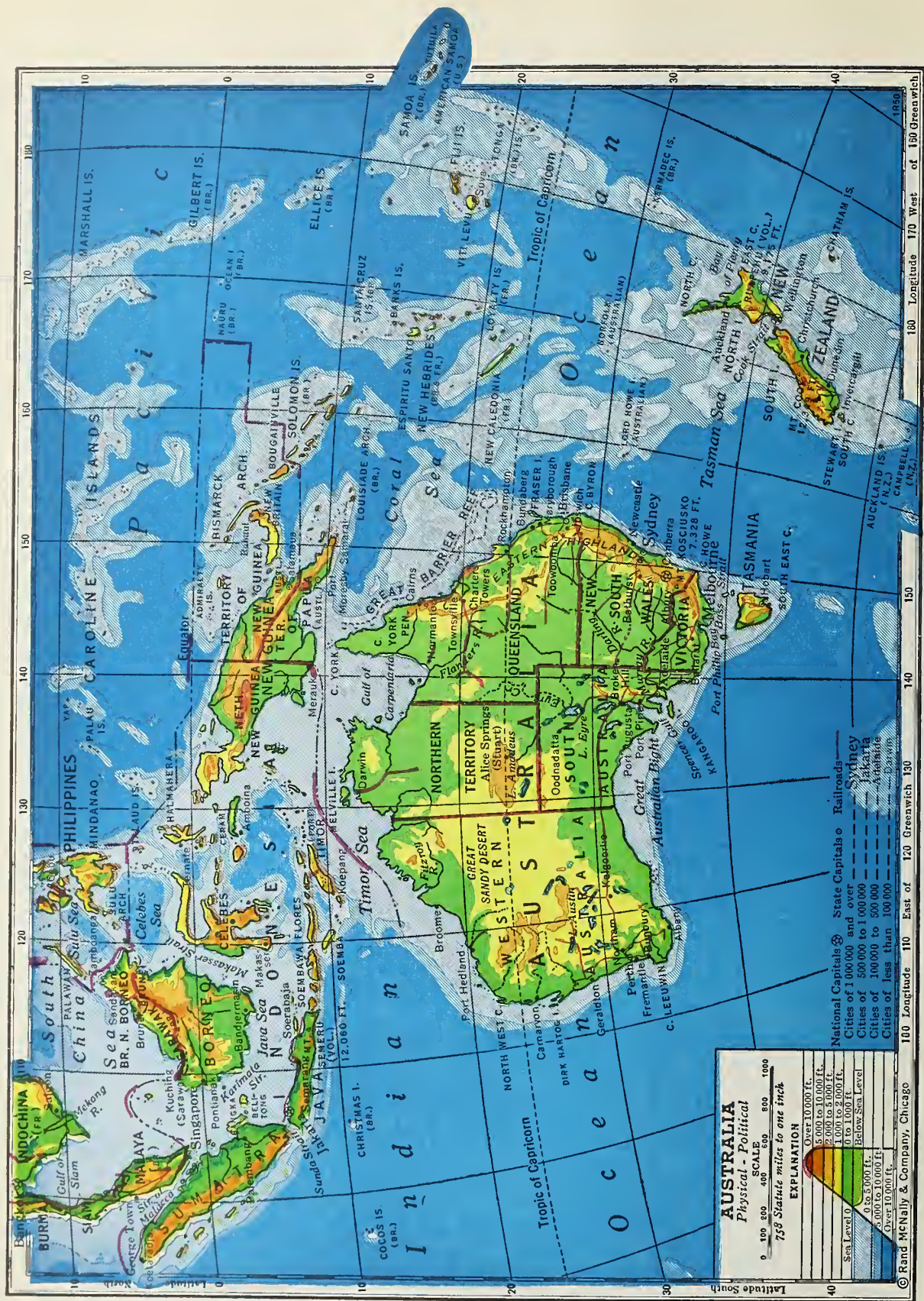
You can study relationships between Africa and Eurasia by using latitude and longitude. First, you see that the equator crosses Africa. Through about how many degrees of latitude does the continent extend south of the equator? In degrees, how much farther south does it extend than Asia? How many degrees farther south does it extend than Europe? Remember to add degrees north and south of the equator.

The equator is the natural place to begin numbering degrees of latitude. Use a globe to help you see why. The equator divides the world in half, midway between the two poles. There are 360 degrees in a circle. From the equator to a pole is one-fourth of the distance around the earth. Divide 360 by 4 and the answer is 90. Degrees of latitude are numbered from 0° at the equator to 90° at the pole.

There is no such natural place to begin numbering degrees of longitude. For a long time different countries counted from different meridians, but this was inconvenient. The people in one country had trouble using maps made in another country. For convenience, then, many nations agreed to start numbering from the same meridian. You can find this meridian on the map at the left. It cuts across the western part of Africa and is numbered 0.

Africa extends a little more than 50° east of this meridian, or a little beyond 50° east longitude. It extends a little more than 15° west of the line, or to about 15° west longitude. Over about how many degrees of longitude does Africa extend?





A physical-political map of Australia.





A physical-political map of the Pacific Ocean area.

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A dial can be set for any meridian to show time around the world.

## WHERE ARE YOU ON THE EARTH?

On a globe find the meridian numbered 0. The numbers are usually marked along the equator on a globe. Turn the globe halfway around. Now you are looking at the Pacific Ocean. The Americas are toward the east. Asia is toward the west. Southeast of Asia a group of large islands and the continent of Australia almost cut off the Pacific from the Indian Ocean. At the north, Asia and North America almost meet. Far to the south lies the continent of Antarctica. You can find all these things on the map on pages 10-11.

The map of Eurasia on pages 28-29 shows part of the same area. Compare the two maps with each other and with a globe to make sure you understand the relative positions of the continents and islands. See page 33 also.

Find the equator on the map on page 33. What large islands does it cross? Is Australia in the Northern Hemisphere or the Southern Hemisphere? About how far does the continent of Australia extend from north to south,

in degrees of latitude? How far does it extend east and west, in degrees of longitude? Australia is in east longitude. You can tell this because the numbers grow larger toward the east. Now look at the numbers and tell whether New Zealand is in east or west longitude.

Just east of New Zealand find the meridian numbered 180. If you look still farther toward the east, you will find that the next number is 170, and the next after that is 160. You are now looking at the part of the map which is in west longitude and the numbers grow larger toward the west.

The meridian of 180° is neither east longitude nor west longitude. It is where east and west longitude meet. This meridian is exactly halfway around the earth from the meridian numbered 0°. The whole distance around the earth is 360 degrees. Since degrees of longitude are numbered east and west from 0, they must meet halfway around the earth.

You have been using parallels and meridians as direction lines on maps. They have an even more

important use, on a map, on a globe, and on the earth. They are used to find locations. The navigator of a ship or an airplane learns where he is by finding his latitude north or south and his longitude east or west. Suppose, for example, that you are in a plane flying toward Australia. You see land beneath you and wonder what it is. You find that your latitude is 10° south and your longitude is 150° east. A glance at the map on page 32 tells you that the land is the eastern end of the island of New Guinea. If you were at 10° north, 130° east, what would be the nearest land?

To find latitude, the navigator has an instrument that tells the height of the noonday sun in the sky. He also has a book that tells him where the noonday sun is directly overhead on each day in the year. Suppose he finds from his book that on this day the sun is directly overhead 20° north of the equator. His instruments tell him that he is 10° north of the place where the sun is straight overhead. He knows now that he must be at 30° north latitude.

Finding longitude is almost as simple. It depends upon having a very accurate clock, for longitude is found by means of time. Time throughout the world is based on the time at Greenwich, England, which is on the meridian numbered 0. Every navigator carries an accurate timepiece set always to show Greenwich time. He can also get Greenwich time by radio. He has instruments to tell him the time where he is, and from the difference in time he knows the longitude. The following paragraphs tell you how he learns it.

You know that time is not the same all the way around the earth. The earth turns steadily toward the east. In 24 hours' time it turns through 360 degrees of longitude. This means that it turns through 15 degrees each hour. For every 15 degrees, then, there is an hour's difference in time. It is an hour later toward the east, an hour earlier toward the west. When it is noon in Greenwich, it is one

o'clock at 15° east, three o'clock at 45° east, six o'clock at 90° east, and twelve o'clock, midnight, at 180°, halfway around the earth.

West of Greenwich the time goes the other way. When it is noon in Greenwich, it is eleven o'clock at 15° west, six o'clock in the morning at 90° west, and so on.

If a navigator finds that it is noon by the sun when it is three o'clock in Greenwich, he knows there is a difference of three hours' time. This means a difference of 45° longitude. Since Greenwich has later time, he must be at 45° west longitude.

Many globes have time dials such as the one you see on the opposite page. They can be rotated and set for meridians 15° apart. If you want to know what time it is in Calcutta when it is noon on the meridian nearest your home, turn the dial so that 12 o'clock noon is on the globe meridian nearest your home and look for the time on the meridian nearest Calcutta.

## HOW REGIONS OF THE WORLD ARE RELATED

In this book you will study the world region by region. You know that there are many kinds of regions. Notice the regions on the physical political map on pages 10–11. Here you can pick out highland regions and lowland regions, coastal regions and inland regions. When you look at the map on pages 12–13 you see that the world can be divided into regions according to rainfall. The growing-season map on pages 14–15 shows regions, too. You cannot draw a line around an area on the map and say, "This is a region." You must also tell the kind of region you mean.

### What Is a Region?

Altitude, nearness to the ocean, rainfall, and growing season are all features of the natural environment. You know that these features are related to one another. You have learned, for example, that some tropical lowlands are rainy, and that highlands have a shorter growing season than lowlands in the same latitude. If you were

to study the maps very carefully, you might see many such relationships. You might be able to divide the earth into regions based on a combination of natural features. You have heard of such regions. You call them hot wet lands, hot dry lands, and so on.

**Natural and social regions.** Look first at the lowlands in the *low latitudes*. When we speak of low latitudes, we mean the latitudes with low numbers. In other words, lands in the low latitudes are lands near the equator. *High latitudes* are those that have high numbers, near ninety. They are the polar regions. The lands between are in the *middle latitudes*. These are convenient terms to use when you are making general statements about the earth. You cannot say that any certain parallels are boundaries between the low, middle, and high latitudes.

Low-latitude lands that are not very high above sea level are usually hot and rainy. Most of these hot wet lands are covered with tropical forests. Hot dry lands have desert vegetation. Most fairly rainy middle-latitude





lands were once covered with forests. Drier middle-latitude areas are usually grasslands. When you wish to study regions based on the natural environment, the vegetation map is your best guide.

Differences in social environment also divide the earth into regions. You can see this on the population map on pages 18-19. On it you see regions of sparse population and regions of dense population. You will learn later that there are regions in which a special kind of work is important, regions set off by ways of living and in various other ways that have to do with people rather than with the natural environment.

The natural environment influences people and the things they do. Sometimes we can see the influence best by studying what people did in the past, for people have now learned to change and control their environment to some extent. For example, in the western United States and Canada there are hundreds of square miles of farm land where cattle once grazed on the grass that made up the natural vegetation. These lands do not have enough rain for the crops now grown on them. By means of irrigation, people have given the soil enough moisture for farming. Long ago, people everywhere depended only upon the building materials found in their own region. In a region with plenty of timber, most houses were made of wood. In a region with good clay for bricks, most people lived in brick houses. In a region with easily worked building stone, stone houses were common. Now, in regions that have good transportation, people can get any kind of building material they want.

Sometimes we say this in another way. We say that people have enlarged their environment. Whatever affects people anywhere becomes part of their environment. The regions that produce lumber for your furniture,

*Ewing Galloway—American Can Co.—Dole Pineapple Co.*

Materials are sometimes shipped around the world. Here you see tin being mined by Malays, made into cans in the United States, and packed with pineapple in Hawaii for shipment to many countries.

wool for your clothes, wheat for your bread, and the orange you had for breakfast, all become part of your environment, even though these regions are far away. The valuable resources found in one part of the earth may be used as raw materials in a factory halfway around the world. There they may be combined with raw materials from a dozen other regions. The finished products may be sold in all the six continents on which people live. Thus the ways of living have become much the same over large areas in different regions.

**How to study regions.** As you study each region of the earth, there are three things to think about.

1. The natural environment.
2. The social environment. This includes density of population, where the people live, and the things they have built or made, such as houses, factories, roads, railroads, canals, and dams.
3. The relation of the region to the world as a whole.

The social environment of a region is related to the natural environment. The work people do and their ways of living depend partly upon climate, surface, and natural resources. They depend also upon the skill and knowledge of the people themselves. Ways of living in every region depend partly upon the environment, partly upon the past history of the people who live there. You know, for example, that when Europeans settled in America they brought their ways of living with them. They did not live as the Indians did.

**Regions related in environment.** The ways in which a region is related to the world as a whole also depend partly upon natural environment and partly upon the past history of the world. In your map studies you learned about rainfall, growing season, and vegetation over the whole earth.

You saw, for example, that there is a belt of cone-bearing trees extending around

the earth between 50° and 70° north latitude. The forest is there because of the climate. Although we recognize different regions within this forest belt, these regions all have the same kind of natural vegetation and much the same kind of climate.

**Regions related by their use.** Other relationships between regions depend upon what has happened in the past. We may use the cone-bearing forest belt again as an example. In some regions within the forest belt, the land was cleared many years ago by pioneers who needed fields for their crops. In other regions lumbering was carried on because people needed the lumber, and railroads were built into the forest. In parts of the forest in Canada the Indians hunted animals for fur. They would not have done this if people from other parts of the world had not built trading posts where they could sell the furs. Where the cone-bearing forest belt is used for farming, it now seems much the same as areas in the broadleaf forest region that are used for farming. Most of the lumber goes to more densely populated regions. The furs from the northern forests also go to other regions for sale. Thus the things people have done in the past have changed this northern forest belt. The work people do there now is closely related to the work people do in other regions.

Almost everywhere in the world such things have happened. People have widened their own environment by reaching out to other parts of the earth for food, raw materials for their factories, and building materials for their houses. Regions have become related to one another in this way. The people of one region depend upon other regions to supply them with many things they need. To understand what people do today, therefore, you need to know some of the things that people have done in the past.

You will learn much about the past from your study of history. The following pages will help you to see how things done in the past influence the way people live today.



## INFLUENCES ON YOUR ENVIRONMENT

The class may work together on this exercise. List five objects in your classroom. Choose objects whose origin you can find. For example, if you choose your textbook as one of the objects, the title page tells you where it was made.

The objects you have listed are part of your environment. How many of them were made in your own town or your own region? How many came from other regions? Locate on a map the places in which they were made. From your study of these objects, what other regions, would you say, have had some influence on the environment of your classroom?

## THE PROGRESS OF CIVILIZATION

Probably you know that there was a time when all the people in the world lived by hunting and gathering wild plant foods. Between one region and another there was not much difference in ways of living. The only natural resources anyone knew how to use were wild animals and plants, stone, and wood. Such things were found almost everywhere. If a region did not have them, people could not live in it at all.

### How Civilization Began

These early people used the materials they found, with very little change. They roasted meat over a fire. They fastened animal skins together to make clothing. Tools and weapons were made by chipping suitable stones into shape. With the stone tools they shaped objects of bone and wood.

**Hunters and food gatherers.** The time when people lived in this way is called the Old Stone Age. Early in the Old Stone Age there were probably no people at all over much of the earth. During this period of time people moved into most of the regions that could supply them with food.

People seem to have lived in small groups, much like the tribes of the American Indians. Groups must have met sometimes, for the people over large areas learned to make their tools and weapons in the same way.

Ways of living differed from place to place during the Old Stone Age, but the differences were not very great. There could not be very much difference when everyone

lived so simply. Weapons and tools were improved, but until a much later time there were no inventions that completely changed ways of living.

**The first farmers and herdsmen.** Turn to the map on pages 30-31 and find the Nile River. Put your finger on it near its mouth. Now move your finger northward along the Mediterranean coast, and then east to the Tigris and Euphrates rivers, down these rivers to the Persian Gulf, and along the coast as far as the Indus River.

Somewhere in or near the area you have brushed with your finger came the first great changes in ways of living. The people who lived here began to try out better ways to use some of the earth's resources. Here grew wild grasses with large, plump seeds. Probably people had been gathering these seeds for hundreds of years, going each year to the places where the grasses grew thickest. A great many people may have wished that the patches of grass were larger. Finally someone may have thought that the patches might be made larger by scattering seeds on new ground. However this may have happened, farming began somewhere in the region. The first crops were wheat and barley.

The herding of animals also seems to have begun somewhere in this region. Perhaps a hunter caught animals alive and took them home so that he would have them when he needed them. Perhaps a band of hunters decided to protect a flock of wild sheep or goats and drove them to places where they could find plenty of grass and water.

Whatever the exact details may have been, we can be sure that farming and herding began very simply and naturally. The first farmers and herdsmen did not realize the importance of what they were doing. They did know that living became easier and there was less danger of having too little food. Their neighbors followed their examples, and the new ways of living soon spread over the region from the Caspian Sea to the Persian Gulf, and from Egypt to the Indus River. You will find the map on pages 30–31 best to use in finding the region.

**Other discoveries and inventions.** Ways of living improved quite rapidly for those days. People learned to make pottery dishes of clay. They learned to build houses with walls of woven branches plastered with mud. Then they learned to make bricks of mud. The first ones were dried in the sun. A little later bricks were baked in ovens.

The people discovered how to weave cloth from the wool of their sheep and from flax fibres. They invented a simple plow, made from a tree branch, and trained oxen to pull it. Stone was still used for weapons and tools, but now some of these were polished and smoothed into better shapes than the old ones. You may think of the time after farming began as the New Stone Age.

**How knowledge spread.** The new ways of living spread slowly from the region in which they began. In time they spread over most of Eurasia and Africa, taking hundreds of years to reach northern Europe. Seeds and animals were probably passed along from one group of people to another, together with the knowledge of how to raise them. So also was the knowledge of how to make pottery, weave cloth, and build houses.

**Metal, a great discovery.** In the meantime new inventions were appearing in Egypt and in southwestern Asia. One very great invention was metal working. The first metal that people learned to prepare

from the ore was copper. Later they learned to add tin to make the alloy bronze. Bronze is much harder than copper. It can be made into sharper knives and better weapons. Bronze was the best metal known for hundreds of years. This long period of time is called the Bronze Age.

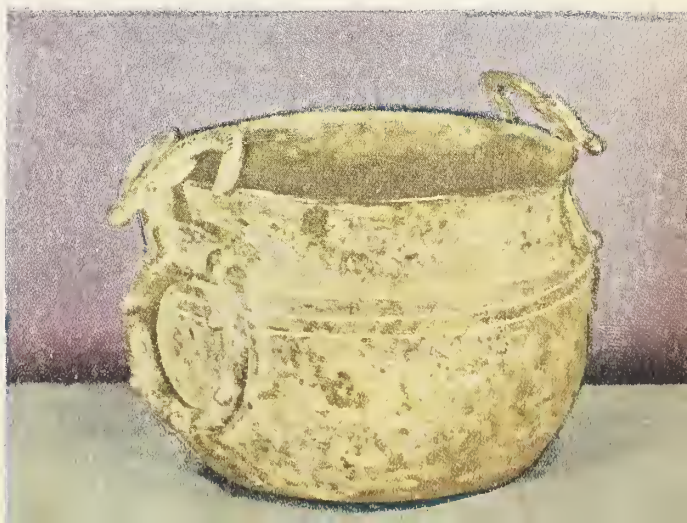
**The greatest inventions.** By the early Bronze Age people had learned to build ships. The ships were driven by square sails and rows of oars. They were small, but traders made long voyages in them. They traded around the shores of the Mediterranean and northward along the Atlantic coast of Europe.

During the early Bronze Age the wheel was invented, and its use spread across Eurasia. A great many people have called the wheel the greatest invention of all time. Nearly all land vehicles run on wheels. Besides the wheels that are used in transportation, there are wheels somewhere in the construction of most machines.

Although some of their inventions spread over wide regions, the people of Egypt and of southwestern Asia remained leaders for a long time. They learned to make large buildings of stone and brick. Some of their villages grew into the world's first cities. Writing was invented at about the time the cities were growing up. This, too, was one of the greatest inventions of all time.

**Artistic as well as useful things were made of bronze. Why are some of them well preserved?**

*The Asia Institute*





There is a word used to describe what was happening in Egypt and southwestern Asia. We say that *civilization* began here, or that the people were becoming *civilized*. Those who lived in this region were the first civilized people in the world.

## Civilization in Europe

For several thousand years the people of Egypt and southwestern Asia remained leaders in civilization. Then the people of another region became more progressive and inventive. Turn to the map on pages 26–27 to see where this next great growth in civilization took place. South of the Black Sea is a large peninsula called Asia Minor, which early became part of the civilized area of southwestern Asia. West of Asia Minor is the Aegean Sea, dotted with islands. To the south is the island of Crete. To the west is another peninsula called Greece.

**First civilization in Europe.** From Egypt and southwestern Asia, civilization spread to the islands of the Aegean and the shores of Greece. The people who lived there became great traders. They were as civilized as any other people of these early days. Then something happened that was a great disaster for them, but probably fortunate for us. Invaders came into the peninsula of Greece from the north. These invaders are the people we know as Greeks, not those who lived in the peninsula earlier. The Greeks were much less civilized than the people they conquered or drove out. It must have seemed at the time that they had destroyed the civilization of a large region.

Soon the Greeks, too, became civilized. They could scarcely have helped it when they were so near the older civilized region. They did not, however, take over the old civilization unchanged. They changed it to make it fit better into their own environment. Even more important, they changed it to fit the ways of living and the ideas they had brought with them. To us these seem to

be better and freer ideas than the earlier civilized people had. Those earlier peoples went on in their own way, but they seemed to have lost their energy and their inventiveness. The Greeks were just getting started. They were not bound by old ideas and old ways of doing things. They were ready to try something new.

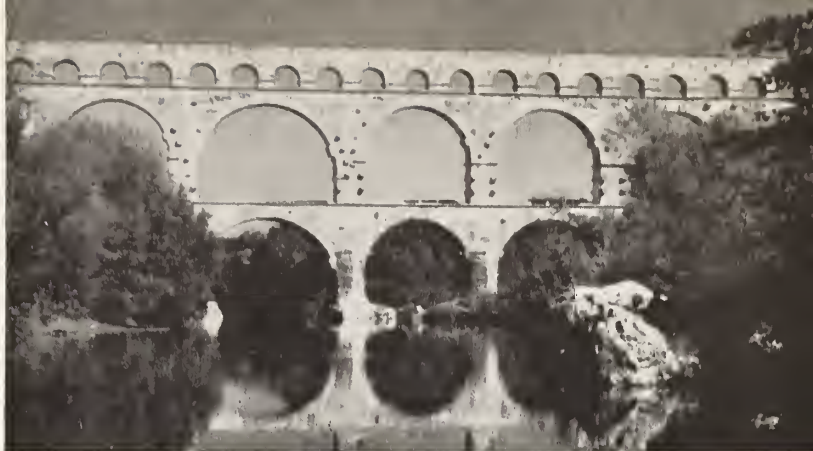
In Greece began the special combination of ideas and ways of living that we know as European civilization. It developed by slow steps into the kind of civilization we have today. It is still growing and changing and coming to influence more and more of the world. Other people have made many contributions. Nevertheless, we can truly say that the beginnings made in Greece almost three thousand years ago were to grow until they influenced the whole world.

**The Romans spread civilization.** You have read stories about the ancient Romans. They were the people of one city who came to rule all Italy and then a much larger area. They learned much from the Greeks, but they, too, changed what they learned.

A little less than two thousand years ago Rome ruled an area about as large as the United States. It included the southern part of Great Britain and all western Europe, as far east as the Rhine. On the south it included all the lands along the Mediterranean, extending north beyond the Danube in places. It also included southwestern Asia and North Africa. This area under Roman rule is called the Roman Empire. In southwestern Asia people adopted part of the Roman civilization, but their own older civilization was too strong to be changed entirely. Western Europe was different. People there had been only partly civilized before the Romans came. They spoke many different languages. Now most of them learned Latin, the language of the Romans. They took over Roman ways of living.

Then Roman civilization, too, seemed to lose its energy. The government became weak and could no longer defend the empire.

At the same time great *migrations* were going on in lands outside the empire. Whole tribes of people were moving from one part of Europe to another. They finally conquered all western Europe, setting up kingdoms of their own. They did not drive out all the people who had lived there under the Romans, but they became the rulers. Strange as it may seem, most of the Roman civilization disappeared, and living became more simple and crude.



© Screen Traveler from Gendreau

This is one of the most famous of all Roman bridges, the Pont du Gard in Nîmes, France. The ends of the bridge are broken.

**The Middle Ages.** A long period of time following the end of the Roman Empire is called the Middle Ages. The Middle Ages lasted for about a thousand years. You may remember the dates 500 and 1500 as the beginning and ending. Of course, no exact time can really be set for the beginning and ending of a period in history. Ways of living change little by little.

During the Middle Ages a new kind of civilization grew up in western Europe. It was influenced by Roman civilization and by the ideas and ways of living of the people who conquered Rome. It was deeply influenced by the Christian religion, which had begun in Palestine, on the Asiatic coast of the Mediterranean Sea.

Most of the present-day nations of western Europe began during the Middle Ages. Present-day languages began, too. The languages of Italy, France, Spain, and Portugal developed from Latin, the language of the Romans. The languages of most of the other peoples of western Europe developed from the speech of the people who conquered the Roman Empire. Our own languages belong to this group. They are languages that developed in England and France. Today we use many Latin words in our common speech.

You have been reading about the civilization of western Europe. Turn to the map of Europe on pages 26-27. Imagine a line drawn from the Baltic Sea to the Adriatic

Sea. When we talk about western Europe we usually mean the part of Europe west of this line. Of course, it is not possible to draw an exact boundary line between two kinds of civilization.

The civilization of eastern Europe was somewhat different from that of western Europe. It had been influenced very little by Roman civilization. Instead, the land had been invaded time after time by people from Asia, and it had been influenced by their kind of civilization.

During the Middle Ages the people of one part of the earth knew very little about the people of other parts. Few people travelled far from home. Each large region had its own kind of civilization, and no region was influenced very much by other regions. We may say that the Middle Ages ended when the people of western Europe became interested in the rest of the earth. Then began the changes that were to carry the civilization of western Europe to the whole world.

#### WHAT DOES CIVILIZATION MEAN?

You have been reading about civilization, but you have not found any one sentence that defines the word. It cannot be defined in one sentence, as many words can. Try to explain, as simply as you can, what you understand by the word. You may use the dictionary to help you.



# THE EARTH ALMOST ONE REGION

As you study the numerous regions of the earth, you will find that the people in every one of them have been influenced by the kind of civilization that developed in western Europe. European civilization has also bound the world together in many relationships between one region and another. It sometimes seems that we can scarcely think of the world as divided into regions at all. It has almost become one great region, with every part influencing every other part.

## In the Days of the Explorers

The people of western Europe wanted products that could be grown only in the tropics. No doubt you have read how Portuguese explorers sailed farther and farther southward along the coast of Africa. One of them reached the southern tip of Africa in 1488. In 1492 Columbus reached America. He was looking for a way to eastern Asia by sailing west. People had known for a long time that the earth is a sphere, but Columbus was the first who tried really to use this knowledge. A few years later Magellan's ship sailed all the way around the earth.

**Unknown lands and people.** You know the story of what happened after that. People from western Europe gradually explored the whole earth. They settled the Americas and South Africa, Australia, and many smaller areas. In some of these lands they found races of people they had not known earlier.

The explorers were all Europeans. They belonged to the white, or Caucasian, race. Neither of these names describes the race very well, for all people, even the blondest Europeans, have at least a little brown coloring material in their skin. The people of Egypt and southwestern Asia belong to the same race, although they are very dark. The name Caucasian was given this race a long time ago, but that is not a good name, either.

European explorers had known people of the Mongolian race, too. Most of the people of eastern Asia are Mongolians. The Mongolian race is sometimes called the yellow race, because the skin of many Mongolians is a yellowish brown. Most people think of differences in color when they talk about races, because these are the easiest differences to see. Scientists, however, use measurements, such as size and shape of the head, amount of curl in the hair, and shape of the face.

In South Africa the explorers and settlers found Negroes. The Europeans had known Negroes before, too, for they lived in nearly all of Africa south of the Sahara. From the time of ancient Egypt, the people who lived around the Mediterranean had carried on a little trade with them.

In America the explorers and settlers found the Indians, whom they considered a new race. Most scientists now call the Indians a branch of the Mongolian race. In Australia the Europeans found people of another race. The explorers thought of the native people of Australia as Negroes because of their very dark skin. Scientists say they

**Homes of the Inca Indians.** Europeans found these Indians living in cities built of blocks of stone.

*Ewing Galloway*





are more like Caucasians. Generally they are called a separate race, living only in Australia and some of the near-by islands. On the islands in the Pacific the explorers found brown people. Some scientists consider these people still another race; others say they are probably a branch of the Mongolian race. In addition, there are smaller groups of people in the world who do not seem to belong to any of the great races.

The explorers also found many different kinds of civilization. The world they explored might be thought of almost as a museum of all the civilizations of the past. The natives of Australia were in the Old Stone Age. They lived by hunting with weapons of stone and wood. They had no homes but wandered about in tribes, building shelters of branches wherever they were.

Australia was cut off from the rest of the world. The Australians seldom saw any other people, and so they had no chance to learn about inventions and discoveries made in other parts of the world.

Perhaps you wonder why the Australians did not think of better ways of living for themselves. It is not surprising that they did not. Remember that people lived on the earth for thousands of years before anyone

at all thought of farming or herding or building houses or using metals or writing. Once made, an invention spread from region to region and from people to people. European civilization is based on discoveries and inventions made long ago in Egypt and southwestern Asia. No one group of people all alone has ever gone far in developing civilization. Civilization grows by the exchange of ideas and through the contributions of many people.

In the Americas and in the islands of the Pacific, the explorers found people who were still living in the New Stone Age. They had farms, made pottery, and built simple houses. Some kept animals and wove cloth, some did not. In Mexico, Central America, and the Andes region of South America, people were living much as the people in Egypt had lived during the Bronze Age.

It is interesting to know where people of different races live in the world, but it is not important in your study of geography. Everywhere people of all races must use their environment to provide them with a living. How they use it depends upon the natural resources within reach, upon what the people have learned in the past, and upon their contacts with the rest of the world.

**Ruins left by the Incas tell us that their civilization had progressed about as far as that of the Bronze Age people of southwestern Asia.**

*Ewing Galloway*





# The Expansion of Europe

The changes that began with the explorers are sometimes called the expansion of Europe. Of course the continent of Europe did not expand by so much as one inch. It was European population and European influence in the world that expanded.

**Early European influence.** Nearly all the early explorers were looking for goods that Europeans could use. They wanted sugar and spices and cotton from tropical lands. They bought furs from the Indians and ivory from the people of Africa. Profits were large, for such goods could be bought cheaply and brought high prices in Europe. The traders paid for their goods with manufactured articles such as woollen materials, knives, axes, and mirrors. The people of southeastern Asia would not take large quantities of such goods, however. They wanted gold and silver. Many explorers, therefore, were looking for these metals in newly discovered lands such as the Americas.

**Exploring the earth.** Europeans were just beginning to realize what wonderful and valuable things were to be found in the world. Trade had been carried on before, but it was on a small scale. Traders had bought and sold a few articles for which people would pay very high prices, such as

jewels and silk. Only a few people could afford them, and even they depended upon their own regions for most of the things they used. Now, for the first time, Europeans understood that the people of one region did not have to be satisfied with the goods they could produce for themselves. So far as we can see, the people of China or of some other area might as well have thought of this first. It just happened to be the people of western Europe who thought of it before anyone else did. It was, therefore, the people of western Europe who explored and mapped the earth. They were the first to understand at least a little about the world as a whole. They knew the size and shape of the earth, where there was land and how to get to it, and what resources could be found in various regions. Within two hundred years they learned more about the world than anyone had ever known before. They did not learn all that was to be known, however. As you read on page 40, we are still carrying on the work they started.

**More Europeans in the world.** In the days of the explorers, the earth had far fewer people than it has now. This was true even of Europe. If population maps had been made then, Europe would have had no region of dense population such as you saw on pages 18–19. For hundreds of years the number of people had not increased very much.

This map, made in 1492, shows the world as people in the days of Columbus thought it was. Only Europe, Asia, and Africa existed for them. They did not know about North and South America.



The explorers found three large, sparsely populated continents, North America, South America, and Australia. None of these continents was so densely populated as western Europe. Some areas in Africa and Asia also had few people. European settlers began to move into these almost empty lands. They filled the empty spaces of the Americas, Australia, South Africa, and many scattered islands. Russian settlers moved eastward across northern Asia. Many Europeans moved even into regions already densely populated, where they became traders or plantation managers. Today many millions of Europeans and their descendants live outside of Europe. About 180,000,000 live in North America alone.

It might have seemed that Europe would soon be empty of population. Strange to say, this was not the result at all. The population of Europe itself grew rapidly while Europeans were moving by the thousands to new lands far away.

The lands settled by Europeans were at first European colonies. They belonged to the countries that had claimed and settled them. Thus very close ties were kept up between Europe and the newly settled lands. The colonists had relatives in Europe. They spoke the languages of their home countries. Ways of living changed somewhat in the new environments, but they remained European ways of living. Thus European civilization was transplanted to three whole continents and parts of two others.

Today European civilization belongs as much to us who are North American people as it does to the people of Europe. Most of us are the descendants of Europeans who came to a new land. We speak a European language. To find the beginnings of our ideas of law, religion, science, art, and music, of our ways of living and working, we must study Europe. European history is part of our own history. We have also made great contributions to European civilization as it is today. These same things are true of millions of people on every continent.

**European civilization changes.** Europeans had learned much more about the world than anyone had ever known before. They were getting from their colonies many new raw materials for manufacturing. Their traders were bringing other materials from regions that were not colonies, and the whole world was becoming a market for European manufactured goods.

Everywhere in the world manufacturing was still done by hand. Methods had not improved much since the Middle Ages. The old methods were slow and expensive. Now traders could bring in more raw materials than the workers could use, and they could sell more goods than the workers could make. Also, the traders wanted cheap goods. Most of the people of the world could not afford to pay much for manufactured articles.

Beginning in the middle of the 1700's a whole new idea about manufacturing came into the world. The changes were so great that they are called the Industrial Revolution. The Industrial Revolution began in Great Britain with the invention of several machines to make textiles. At about the same time a British inventor made the first steam engine to operate machinery. Before many years Great Britain had many textile mills run by steam engines, though others still used water power.

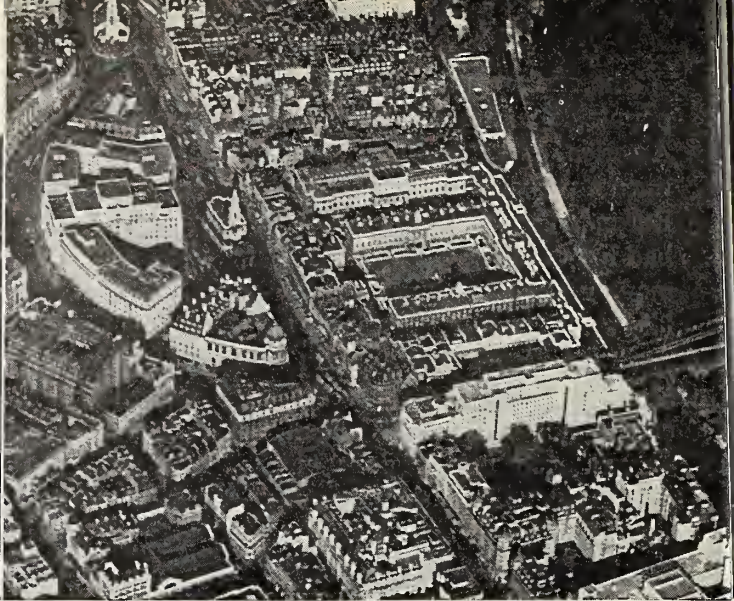
After the idea of using power machinery had come into the world, manufacturing developed rapidly. If textiles could be made by machines, then other goods, too, could be made by machines. New machines were invented, one after another, until there were machines to make almost everything.

When the manufacturing had been done by hand, most of it had been done by people working at home or in small groups. Now great factories were built. Cities grew up around the factories, because workers must live near their work. There were very few large cities in the world before the Industrial Revolution. Now there are many large cities. Most people in cities have jobs connected with manufacturing by machinery.





*Ewing Galloway*



*Aerofilms from Ewing Galloway*

The Scotch village on the left is as simple as it was before the days of the Industrial Revolution, but the Industrial Revolution produced many busy big cities, such as London, shown at the right.

**Manufacturing and population.** We might think that the new methods of manufacturing would spread very rapidly over the whole earth, but they did not. Even now, two hundred years later, there are still parts of the world that have scarcely any factories and machinery.

The Industrial Revolution did spread very quickly to the countries of northwestern Europe and to the eastern part of North America. These two areas became great industrial regions. You can find them by looking at the population map on pages 18–19. They are the two areas of dense population that face each other across the North Atlantic Ocean. When a region has many factories and does much manufacturing, we say that it is *industrialized*.

The industrialized regions did not become densely populated by chance. In the first place, they were good farming regions. In the earlier days of machine manufacture, factories depended largely on their own regions for raw materials and food for their workers. Only good farming regions could support much industry in those days.

In the second place, more people can live well in an industrialized region than in one that is not industrialized. There are more

ways to make a living. A worker in England or Belgium or Ontario helps to make products that are sold in other regions. To pay for part of the manufactured goods, people in other regions send food. The highly industrialized regions do not produce enough food to feed their own people, and they do not need to produce enough. They have goods to trade for food.

The population map, pages 18–19, shows areas of dense population in southeastern Asia. Here the density of population does not mean that these areas are industrial regions. Most of the people in these regions live on tiny farms of a few acres. They must grow only crops that produce much food to the acre, and they have very little to sell. Since they have little to sell, they cannot buy much, and they must do without a great many things that Americans and Europeans expect to have. If these regions can become industrialized, their people will be able to make a much better living.

### **Industries spread European civilization.**

The two areas of dense population on opposite sides of the Atlantic are still the most highly industrialized regions in the world. There are now factories in all regions of



European civilization, however, except in places where very few people live, such as the far north of North America and Eurasia. Some regions that did not originally belong to the areas of western European civilization have also become industrialized. You learned that historically eastern Europe had a slightly different kind of civilization. As machine manufacturing spread to eastern Europe, ways of living and working and even the appearance of its cities became more like those of western Europe.

There is also a great industrial region in the Russian part of Asia. Japan became industrialized many years ago, but kept its own kind of civilization in nearly everything not related to industries. There are smaller industrial areas in other parts of Asia. In most of them European civilization has been adopted in part, but has blended with the people's own earlier civilization. For example, some people dress in the style of clothing worn in Europe and America, while others wear native clothing.

## World Industrial Civilization

European civilization has become industrial civilization, and it has come to influence the whole world. There are no large groups of people anywhere who have not adopted at least a little of it. Imagine, for example, a few native families living on an island in the South Pacific. No Europeans live near them. In fact, they seldom see a European. They live in houses made of palm leaves. Their food is fish caught in the sea near their homes, and vegetables grown in their gardens. Most of the things they use are homemade. They work and live very simply. They have never gone to school and cannot read or write.

Writers of travel books sometimes speak of such people as "untouched by civilization," but that is not quite true. The clothes of the native families are made of cotton cloth woven in England. They have long knives and kettles made in America. Besides

the vegetables for their food, they raise a few coconuts to sell. Every year they take the dried coconut meat, called copra, to a trader on another island. They go by canoe. In payment for the copra they select manufactured articles from the trader's store. The copra goes to a factory in Europe to be made into coconut oil.

Thus these families on the island in the South Pacific have a few products of industrial civilization. They also contribute to it by furnishing a tiny fraction of the raw material used by a factory on the other side of the earth.

As you read this book, watch for the influences of the kind of civilization that developed in western Europe. See how much has been adopted and how it has been changed to make it fit the environment. Notice also how it has been changed to make it fit the ideas and ways of living of the people who live in a region.

**Political influence.** Anything that has to do with government may be called *political*. Countries and states are political divisions of the earth. Boundaries between them are

Here you see a South Pacific islander cutting the shell off a coconut, to get at the meat.

Ewing Galloway





political boundaries. Political influence is the influence of governments.

You have seen how European countries founded colonies in sparsely populated parts of the earth which could be settled by Europeans. Trade led to the setting up of colonies of another kind. Africa and Asia had many areas in which the population was already fairly dense. Europeans did not expect to drive out the people or take their farm land away from them, but they did want to trade with them. Very often the traders got into trouble with the people who lived in a region. Then, sometimes by conquest and sometimes by agreement with native rulers, European countries took over the government of large areas.

Such colonies were quite different from those that were founded earlier when European settlers went to live in nearly empty lands. European civilization as a whole was not transplanted to these later colonies. The native people kept their own ways of living and often had their own rulers. The European countries to which the colonies belonged made part of the laws. They gave their own citizens advantages in trade over the citizens of other countries.

Most of the colonies in the world today are of this second kind. Of the large colonies that were actually settled by Europeans none is a colony any more.

"Colonies" is a convenient name for all countries controlled by another country, but colonies are not all alike. Some are governed entirely by rulers sent from the ruling countries. Other colonies carry on their own home governments. Some are expected to become independent when they have had more experience in governing themselves.

Sometimes a country has political influence in another country that is not a colony at all. Two countries may have special trade agreements. An industrial country may be allowed to develop the resources of a country that is not industrialized.

You will find, as you study, a great variety of political relationships between countries.

There are many between industrialized countries and countries that are not industrialized. The industrialized countries have tried to make sure that their own industries will have sources of raw materials and markets for their goods. Europeans found it hard to trade in countries with very different laws and ways of living. Sometimes an area was not safe for Europeans because of wars between tribes or between the rulers of little countries. In many places there were valuable resources that had never been developed. Often the native people did not have the knowledge or the skill or the machinery to develop such resources. Usually transportation was poor. In many parts of the world people did not want changes to come. Some of them did not want Europeans to come to their countries at all.

When the French came to what is now eastern Canada, they found only a few North American Indians living here. Some French came to make money from fishing and the fur trade. Many others came to farm the rich lands. Still others came as missionaries to preach the gospel to the Indians.

Later the English captured the country from the French and extended their control as far west as the Pacific Ocean. They developed the resources of the country, and used these resources to promote the welfare of both England and Canada.

In all colonies the people have been ruled at least in part by laws made in Europe. The settlers brought with them the languages, religions, and customs of their mother countries. Canada is no longer a colony; but the influence of Europe, especially of England and France, is still with us. Most Canadians speak English, but millions of our countrymen speak French. England has done more to influence our way of life than any other country has. Our ideas of laws and government are based on those of England.

**Raw materials.** The people of the industrial countries need great quantities of metals and other minerals. For example, there are

large deposits of tin, copper, and oil in countries that are not industrialized. Some of these countries are colonies, and some are independent. In nearly all of them, however, the mines and oil wells have been developed by Europeans and their descendants. Often the deposits have been discovered by people from Europe and America. Scientists, engineers, managers, machinery, and money to start the work have come from industrial countries. But the workmen have been hired from the country in which the deposit is located.

Many people think that the companies in the industrial countries have taken an unfair share of the profits. Nevertheless, the countries in which the deposits were found have benefited by having their resources developed. Ways of living have changed for millions of their people. Formerly most of them were farmers. Now many people work for money in the mines and oil fields. They buy food, clothing, and furniture instead of providing these things themselves. Though they have kept many of their own ways of living, they have become part of industrial civilization.

**World changes in farming.** Before the Industrial Revolution, most people in the world were farmers. They raised their food. A little was sold and other foods were bought, but for the most part each family ate food grown on its own farm. Materials for clothing often came from the farm too—flax and other plant fibres and wool from sheep.

As Europe and America became industrialized, a larger and larger number of people lived in the cities and worked in factories. They could no longer grow their own food. Population became denser, too. Few highly industrialized regions grow enough food for all their own people. Food must be brought in from other regions, and manufactured



*Photo from European*

**European engineers planned this pipe line. It carries oil from the wells of southwestern Asia across the desert to a seaport.**

goods must go to these other regions to pay for it. Thus trade develops and people in both regions have many things to use that they would not have had otherwise.

Tea, coffee, chocolate, much of the world's sugar, oils used in cooking, spices, and much meat come from parts of the earth that are far from any industrial region. For example, you saw how a family in the South Pacific may raise a few coconuts for oil. A farmer in the centre of Africa may raise peanuts for oil, or gather oily nuts from a palm tree.

Some industries use raw materials that grow on farms. Many of the food crops are raw materials for factories. Nuts are raw materials for the oil factories. Cotton, flax, hemp, jute, sisal, and other fibres are also raw materials grown on farms and sent to factories. Wool, mohair, camel's hair, and alpaca, which are raw materials for textile mills, come from animals kept by herdsmen.

There are parts of the earth that may always be lands of farmers and herdsmen. They are lands where there are no sources of power, or where it is hard to provide the network of transportation needed for an industrial region. Even such lands, however, have become a part of industrial civilization because they supply certain raw materials.





*Ewing Galloway*



*Deane Dickason from Ewing Galloway*

At the left is a picture of African natives harvesting sisal on a large plantation. At the right you see the sisal fibres hanging in the sun to dry. The fibre is then sent to factories.

Long ago people of grasslands were herdsmen and lived almost entirely on animal products. Farmers lived chiefly on the products of their own farms. Food varied from region to region according to the crops that could be grown. In countries, such as our own, which are part of the area of industrial civilization, all this is changed. In most parts of the country, people eat about the same kind of food, whether it is grown in their own regions or not. No one region needs to meet all the needs of its own people. A farmer may not need to grow food crops at all. He may buy all the food for his family and specialize in growing an industrial raw material on his entire farm.

This specializing is becoming more and more true all over the earth. In tropical lands, products for sale are grown on large plantations with many hired workers. Sugar, coffee, tea, chocolate, rubber, fruit, and coconuts are among the products grown in this way. Often such products are raised on

small farms and sold to a trader who buys and puts together the crops of many farms.

**World civilization.** You have now read the story of how a special kind of civilization developed in western Europe and how it came to influence the whole earth. Already it has become world civilization, though all regions do not yet fully share in it or contribute to it. The story is unfinished, and no one yet knows the rest of it. You will have to read the new chapters of it in your newspapers and magazines.

There is one more part of this story. World civilization depends upon trade—upon the exchange of products between one region and another. Trade depends upon transportation. Trade between widely separated regions began long, long ago with the first sailing ships that could make long journeys. More extensive exploration depended in part upon improvements in ships and navigation. Steam engines began the real

weaving together of all the regions of the earth. The invention of the steamboat and the steam locomotive for railroads first made possible really large-scale trade over long distances. As you can see on the map of Canada, on pages 20-21, railroads usually meet in manufacturing centres. You will find that the same thing is true in Europe.

Every great improvement in transportation has brought the regions of the earth into closer contact. Every improvement has made it possible for each region to contribute more and more to the prosperity of other regions and has to a great extent brought all the regions closer together.

The latest great improvement in transportation has been the airplane. There have been airplanes for a longer time than you can remember, but you do remember great improvements in them. Their range, their speed, and their size have increased greatly in very recent times. Improvements are still

going on, and we do not yet know all the changes they will bring to the world.

Already airplanes have made regions and countries seem closer together, and so they have made the world seem smaller. They are actually bringing some of our neighbors closer to us in space as well as in time. Does this seem impossible? Find Winnipeg and London, England, on a globe. Move your finger from Winnipeg to Montreal, down the St. Lawrence River from Montreal, and across the Atlantic Ocean to London. Now measure a great-circle from Winnipeg to London. Aren't the two cities closer, in miles, by air? Estimate the time for each journey.

We know that airplanes have already brought many changes to the earth. They have brought all parts of the world closer to one another and have made it more nearly one big region instead of many separate ones. There will have to be new ways of thinking in a world bound together by air routes.

## THE GEOGRAPHY WORKSHOP

### I. THE WORLD IN YOUR COMMUNITY

This year you are learning about the continents that are across the seas from America. Even so, you will find it worth while to carry on a study of your own community. Your community has many relationships with the rest of the world, and the whole world will seem closer to you when you learn about such relationships. The stores in your town have products from distant parts of the earth. You will find war veterans who can tell you about many regions of the world. They probably even know the names of real people who live in places you will study.

Your study of your own community will also help you to understand many things that are true everywhere. For example, it is true that farmers everywhere must choose their crops according to the natural environment of their region. If you know why farmers in your own region grow the crops they do, you will find it easier to understand farming in other parts of the earth.

In the class study of your community, one group may work on the social environment, another group on the natural environment, and a third group on the history of the community. The study will mean most to you if you carry it on throughout the year. In each Geography Workshop you will find suggestions to guide you in relating your own community to the lands you are studying.

#### *The social environment*

The group working on the social environment will collect information on the number of people in your community, where they live, and the things they have built or made. Making a map of your community is a good way to record your information. In drawing the map, you may use road maps, railroad maps, and any other maps that are helpful.

Your map should show where people live, where the stores are located, the main streets and roads, the railroads, canals, and other means of transportation. It should also include important factories and other industries. Members of other groups can help



you by telling you what they would like to have you put on the map. They also will want to consult your map as a guide in their own work.

### *The natural environment*

The group working on the natural environment may use the following questions to guide their study.

1. What is the altitude of your community? Is it near bodies of water? Is the land level, hilly, or mountainous?

2. How much rain falls in a year? Start with the map on pages 12–13. You can get further information from the nearest Weather Bureau station. The office of your newspaper can help you, too. It is also very interesting to measure the rainfall for yourself.

3. What is the length of the frost-free season in your community? You may find that someone has kept an exact record of the dates of latest and earliest frost. If not, many people can tell you when frost may be expected. You will wish to notice for yourself also.

4. What was the natural vegetation? You will be able to find many wild plants, but not all of them belong to the natural vegetation of your region. Some of them have escaped from gardens. Others have been brought accidentally from other regions. Thus you will have to try to find out which plants grew in your region before the first European settlers came.

### *The past of your community*

The group working on the past will be studying historical geography rather than history. You will not be looking for stories of adventure or the lives of famous people. Instead, you will try to find out what your community was like in earlier times and how it came to be as it is today. The following questions will help you.

1. When was your community settled? Where did the people come from? Why did they come? Why did they choose this place to settle? What industries did they start? How fast did the community grow? Did the people who moved in later come from other parts of our country or from other countries? Why did they choose your community?

2. How have the people changed the natural environment? Have they built dams for irrigation, for flood control, or to make a river navigable? Have they drained any land? Have they filled in parts of marshes

or lakes? Have they levelled off any hills? Why did they make each change?

3. How did your community get the kind of transportation it has today? Was your town founded before or after the railways were built? Why did the railways follow the routes they do? When and why were the highways built? Does your community have any water transportation?

4. When did the industries of your community begin? Why? Perhaps they were started because of raw materials produced in the region. If so, do they still depend upon local raw materials? Perhaps they were started because of good transportation or near-by sources of power. Are the same means of transportation and the same sources of power still used? Do the products go to the same markets as in earlier times?

## II. REGIONS YOU SHOULD KNOW

Locate your own home on the map of Canada, pages 20–21. Then on your outline map of the world place a large colored dot to stand for your home. Use the maps on pages 10–21 to find the following information about the surrounding region. As shown by the maps, what is the altitude of the region around your home? How long is the frost-free season? What is the yearly rainfall? What was the natural vegetation?

Now find other parts of the earth in which, according to the maps, conditions are about the same as in the region around your own home. Outline them as well as you can and color them to match the dot you used to show your home.

On what continents do you find regions like your own? Are the latitudes all the same? Are there any in the Southern Hemisphere? Is the density of population the same in all of them?

Save your map to use as you study the regions of the earth. Whenever you come to a region marked on your map, study it carefully and compare it with your own home region. Do people do any of the same kinds of work as in your own region? Do they have the same kind of homes? How does the transportation compare? Does one have any resources, such as minerals or water power, that are lacking in the other? Make other comparisons that seem important to you. Try to explain any differences you find in the number of people and in the way people live and work.

### III. GLOBES AND MAPS

Using a globe, find the great-circle route from your home to London, England. Mark this route lightly with white chalk. A good way to do this is to chalk a string and hold it against the globe. Then raise it a little and let it snap back against the globe.

Now show this same great-circle route on an outline map of the world. You may trace your outline map from the one on page 376 in this book. The latitude and longitude lines will help you draw the route correctly. Add a dotted line to show what appears on the map to be the shortest route.

Draw the same kinds of lines between your home and several other places in the world. Choose at least one in each continent.

What did you learn about maps and globes by drawing these lines?

1. Judging from the lines, do you think distances can be measured exactly on maps?

2. Did you have trouble drawing lines on the map from your home to Asia and Australia? Why did you not have trouble marking the same great-circle lines on the globe?

3. Which of your straight lines on the map is nearest the great-circle route? Which is farthest away?

4. What relationship do you see between distance and your map lines? Is the difference greater in the longer routes or in the shorter ones? For example, on the map a straight line to Moscow is very close to a straight line to London. Is there more or less difference in the great-circle routes?

5. Does latitude or longitude seem to make more difference between great-circle routes and routes that seem on the map to be straightest? For example, compare routes to South America with routes to Europe.

When a pilot makes a flight on a great-circle route, he cannot carry a large globe with him. He must use flat maps to help him find the way. Before he starts, he marks the great-circle route on his maps. Now imagine you are a pilot. You have a compass to guide you. Tell how the direction of your flight would change along each route you have marked on your map.

### IV. CURRENT EVENTS

Things that are happening in the world at the present time are called current events. You read about them in newspapers and magazines and hear about them on the radio.

Try to find current-event items about each continent. If you have a large city newspaper, be sure to look at the page about business and trade near the back of the paper. It is called the financial page in some newspapers. On your maps, locate as well as you can the place each item tells about. Can you find anything on the maps that helps you understand the items better? Have you read anything in this book that helps? You can discuss these questions in class.

### V. A PICTURE STUDY

When you look at the picture on this page, you know at once that it was taken in a region where European civilization has had little influence. You should recognize, however, that the two men have been in contact with the European kind of civilization. First, someone with a camera took their photograph. Second, something you can see in the picture itself tells you the same thing. What is it? Is it the ornaments they are wearing, the cloth for their clothing, or the ladder in the background? Did the men's ancestors come from Europe? Is their hair-dress a European style? With these clues you should be able to give the right answer.

*Rathenau from Piz*





## VI. WHERE DO PEOPLE LIVE?

In the following sentences, you are to choose the correct expression from those you find enclosed in parentheses. Use the maps and what you have read. Sometimes you can use more than one expression to make the sentence correct.

The exercise will be most interesting if the class works together on it. After you agree on the right words for each sentence, try to find at least one reason why the sentence is true. Suppose, for example, a sentence said that desert areas are sparsely populated. You might say, "Deserts are sparsely populated because they do not have enough rain for farming."

1. Most of the densely populated regions of the world are (in highlands, on lowlands).

2. Most of the people in the world live in the (Northern Hemisphere, Southern Hemisphere).

3. There are no areas of dense population (in the Southern Hemisphere, in the polar region, within 20° of the equator).

4. All of the large and most densely populated regions of the world have (less than 10, more than 20, more than 60) inches of rain in a year.

5. In most of the areas of very dense population, the natural vegetation was (grass land, broadleaf forest, desert vegetation, cone-bearing forest).

## VII. WHAT IS CIVILIZATION?

Each of the sentences below has four endings. If you understand what you have read about the development of civilization, you should be able to choose the best ending for each sentence.

1. Civilization began thousands of years ago in

- a. Canada.
- b. western Europe.
- c. Greece and Rome.
- d. Egypt and southwestern Asia.

2. Some of the first steps in civilization were

- a. learning to write, build cities, use metals, and make wheels.
- b. learning to use machines and steam engines in manufacturing.
- c. migration of Europeans to other parts of the earth.
- d. the invention of steamboats, automobiles, and airplanes.

3. Civilization might be explained as

- a. building cities of stone or brick.
- b. learning to make better use of the environment.
- c. a way to make a living without doing any hard work.
- d. methods of farming.

4. European civilization influences ways of living

- a. only in western Europe.
- b. only in western Europe and in North America.
- c. wherever Europeans have gone to become settlers.
- d. wherever people live in the world.

5. In your own time European civilization has become

- a. world industrial civilization.
- b. the only kind of civilization in the world.
- c. less important than it used to be.
- d. a mixture of all other kinds of civilization.

## VIII. NEW WORDS TO USE

In study guide 9 on page 9, you found a list of eleven terms which may have been new to you. Below is a story with nine blank spaces. One of the terms from page 9 belongs in each space. Read, putting the right words in the blanks. You will need to use the map of the Pacific on page 33 and perhaps a globe also. Which terms did you not use?

A pilot made a nonstop flight by the shortest possible air route from Vancouver to Australia. He followed a xxxxx route, crossing the equator at 160° east xxxxx.

Most of the people he saw in Australia were Caucasians, but he also saw a few dark-skinned people of another xxxxx. He learned that the dark-skinned people probably moved to Australia from Asia a very long while ago. At the time of their xxxxx there may have been more land between the two continents than there is now. He also learned that the xxxxx divisions of Australia are called states, as they are in the United States.

From Australia he flew straight north toward China along the xxxxx of 120° east. Very soon he crossed the equator into the northern xxxxx. In China he saw a region of dense population that has few factories and has not become xxxxx. The people have been influenced by European xxxxx, but have kept most of their own ways of living.



## *Industrial Western Europe*

### A MANUFACTURING AND TRADING CENTRE

The western part of Europe is a maritime or sea-influenced region. It faces the Atlantic Ocean. For this reason it has many commercial advantages, for the Atlantic Ocean is the world's greatest highway of trade. The shore line is deeply indented by the ocean and bordering seas. Wide and deep river mouths and other inlets afford quiet water where ships anchor for protection from the storms of the open ocean. The narrower or inner parts of the inlets serve as harbors. There boats reach the edge of the land to load and unload cargoes at docks or piers. The importance of many of these harbors may be judged by the size of the port cities.

London, Glasgow, Liverpool, Antwerp, Le Havre, and Bordeaux are busy ports. You can locate them on the map on pages 58–59. Which of these ports are at places where rivers begin to widen before reaching the sea? There are many small ports and harbors which cannot be shown on a map of this scale.

**Many different kinds of land.** The map on pages 58–59 shows that industrial western Europe has land of different elevations. From this kind of map it is impossible to tell whether the land is rough or fairly smooth. Even in the lowland areas, indicated by the green color, the land is not smooth. There



are many valleys and hills. In other parts of western Europe there are high mountains, broad plateaus, and much rough, hilly land. The people make use of these different kinds of land in a variety of ways. Farming, grazing, mining, lumbering, and even manufacturing and transportation are influenced by the land surface.

**A dense population.** Industrial western Europe has an area of about 360,000 square miles. This is only about one-tenth of the area of Europe. Yet, in this region lives about one-fourth of the population of Europe. If all the people living in industrial western Europe were distributed evenly over the land, there would be more than three hundred people living on each square mile. This makes western Europe a very densely populated area. When we realize that there are many wild and almost unused areas, such as the moors of southern England and Scotland, the crowding seems even greater. Indeed, it is the most densely populated part of Europe and one of the most crowded regions in the whole world.

In order to understand the different ways of making a living in industrial western Europe, you will need to think first about the conditions under which the people live. In other words, you will need to think of their natural environment. You will need to know something about amount of rainfall, length of the growing season, altitude and slope of the land, fertility of the soil, minerals that

are in the earth, nearness to the ocean, and the coast line. These are some of the natural conditions that affect the way people live.

**Study guides.** Now you are going to read about a thickly settled part of Europe that has long been one of the world's greatest manufacturing and trading regions. As you read about this great region, look for answers to the following questions.

1. How does the ocean influence the climate of western Europe? (I)
2. Why are there many important fishing communities in this part of Europe? (IV)
3. What natural conditions made it possible for one of the most important manufacturing regions in the world to grow up in western Europe? (II, III, IV, VII)
4. What is the relation between trade and manufacturing in western Europe? (V, VII)
5. How do the different nations of industrial western Europe obtain enough food for all their people? (IV, V)
6. How has the dense population of this part of Europe influenced farming? (I, VII)
7. Why have the people of industrial western Europe been interested in exploring, settling, and colonizing many far-away parts of the world? (IV, VIII)
8. Why is western Europe divided into so many different countries? (I)
9. Why is this section of Europe of interest to travellers and students? (I, IX)
10. What do American importers buy in this part of Europe? (I, V, VIII)
11. Why is the area of greatest industrialization in Europe also the area of densest population? (III, VII)

## WHAT WE CAN READ FROM MAPS

### LOCATING INDUSTRIAL WESTERN EUROPE

Industrial western Europe, as it is defined in this book, is made up of the British Isles, the Netherlands, Belgium, Luxembourg, the Rhine Valley of western Germany, and all of France except the southern border and the valley of the Rhone.

The British Isles contain more than five thousand islands, but there are only two large islands in the group — Great Britain and Ireland. Great Britain is made up of England, Wales, and Scotland. Ireland is made up of two parts, Northern Ireland and the republic to the south called the Republic of Ireland. Turn to the map on pages 58–59 and find the above areas.



## HIGHLANDS AND LOWLANDS

1. If you turn to the relief map on page 60, you will find that industrial western Europe includes part of the Great Lowland Plain extending across the northern part of Europe. In the Netherlands and Belgium it is narrow, but both east and west of these countries it gradually widens. What does the map on pages 58–59 tell you about the altitude of this region in western Europe? In what direction does the Great Lowland Plain slope in industrial western Europe? You will be able to answer this question by tracing the rivers in the direction in which they flow.

2. Use the physical-political map of western and central Europe on pages 58–59 to find the areas that are more than 1000 feet high. What do the color symbols on this map show about the different altitudes in these highlands?

The Alps are the highest mountains in all western and central Europe. Find them on the map and notice that they help to form the boundary of France. Other mountains and rough, hilly land border France, but only the Alps and the Pyrenees are barriers to land transportation. However, both the Alps and the Pyrenees are crossed in a few places by modern roads and railroads.

3. Look again at the highlands and lowlands of the British Isles. You can see that the highlands are chiefly in Scotland, in Wales, and in the northern part of England. When you see these areas on the map, think of high, grass-covered hills with patches of trailing evergreens known as purple heather, with narrow, winding roads and stone fences, and with rushing streams. Now and then there is a village with thatched-roofed houses.

Long, long ago the mountains in northern Scotland were much higher than they are now. Slowly, very slowly, the great,



*Courtesy British Information Services*

**In England cattle and ponies are pastured throughout the year.**

towering heights have been lowered by running water, wind, and a great ice sheet.

4. Notice the rivers of western Europe. The Rhine has been deepened, widened, and straightened to improve it for travel.

Locate the Seine River in France. Both of these much-used rivers, the Rhine and the Seine, flow northward toward Great Britain.

**Tourists like the quaint fishing villages of southern England.**

*Ewing Galloway*







A physical-political map of western and central Europe.









A relief map of Europe.



## CLIMATE AND WAYS OF LIVING

1. On a map of the world trace the parallel of  $45^{\circ}$  north latitude. Locate Montreal and Bordeaux, France, near this parallel. Note that most of industrial western Europe is north of this parallel. Near the parallel of  $50^{\circ}$  north latitude locate London, England, Paris, France, and Winnipeg, Manitoba. How far north does Scotland extend? Trace this parallel across Canada. The parallel of  $50^{\circ}$  north latitude may be said to pass through the middle of industrial western Europe. This study will help you see that most of industrial western Europe lies farther north than most of industrial Canada.

Although industrial western Europe is in high middle latitudes, its temperatures are not as low as the temperatures in most parts of Canada that are in the same latitudes. The following paragraph will tell you why this is true.

You have learned that water warms more slowly in summer and cools more slowly in winter than does the land. In winter the air over the ocean is not so cold as the air over the land. When winds blow from the ocean to the land, the air over the land becomes warm. The wind from the ocean brings moisture. Cool, moist air seems colder than it really is according to the thermometer. For this reason the winters of industrial western Europe are described as being raw and chilly. A change in wind direction brings about a change in temperature. When the wind blows from the north or northeast in the winter, the temperature drops. The air has come from the cold lands farther north. These winds are most effective in the parts of industrial western Europe that are on the continent. Which would you expect to have lower winter temperatures, the Netherlands or southern England?

2. You have seen that winter temperatures in industrial western Europe are not so low as might be expected, because the winds blow from the ocean most of the time. In summer the temperatures are not so high, even though the summer days are long. Lower summer temperatures are also caused by winds from the ocean. The summers are described as cool, even though at times winds from the east bring warmer, drier weather. You can see that differences in temperature from winter to summer are not as great as in most sections of Canada. In some places, such as

Ireland, grass remains green all winter and woollen clothing is needed the year round.

3. The growing season is the frost-free period of the year. It begins with the last frost in the spring and ends with the first frost in the fall. What difference would you expect to find in the length of the growing season as you go farther and farther north from the equator? Since western Europe lies far north, would you expect it to have a short or a long growing season? Turn to the map on pages 14-15 to check your answer. Most of the St. Lawrence Valley region in Canada has a growing season from four to six months long. Does most of western Europe have a longer or shorter growing season?

4. Use the map on pages 12-13 to find out how much rain this part of Europe has. Most crops grow where there is a rainfall of at least 20 inches a year. Only a few crops need more than 40 inches of rainfall a year. Why does industrial western Europe have enough? Winds from the Atlantic bring moist air and clouds. Dull, gray skies are common. In London it rains on about 164 days each year, but the rains are often light. We use the word drizzle to describe them. As in western British Columbia, these rains are more frequent in winter than in summer. Since the air is cool both in winter and in summer, the ground does not dry rapidly. For this reason 20 inches of rainfall does more good for crops in this region than a greater rainfall in hot regions where the ground dries between rains.

## READING VARIOUS MAPS

The most interesting study of a region usually has to do with the people who live in it. Turn back to the map on pages 18-19 to find what it tells about the distribution of people in industrial western Europe. You will find areas of very dense population in western Europe. They cover most of southern England. On the mainland of Europe, a large area of dense population extends south-eastward across the Netherlands, Belgium, and France into Germany. Do you wonder why so many people live in this area? Let us see what maps can tell us about it.

1. On the population map, the boundary lines that separate one country from another are difficult to trace. Do you think such political boundaries, as these are commonly called, would make any difference in the density of population? For example, does





A map of western European coal and iron fields.

the boundary between Belgium and France separate two areas that differ in density of population? Are areas densely populated because they are in certain countries, or because of conditions which enable people to make a good living?

2. Try to imagine where the area of densest population in western Europe would be

if it were placed on the physical-political map on pages 58–59. For each of the areas of dense population, try to decide whether the land is high or low. In general, then, would you say that most of the densely populated areas are in lowlands or in highlands?

3. Turn now to the map on pages 12–13. How much rainfall is there in the thickly settled area of western Europe? Does any of the area of dense population have an annual rainfall which is too light for crops?

4. Find western Europe on the map on pages 14–15. Is the growing season long enough for many kinds of crops?

5. Turn to the map on pages 16–17. It shows that most of western Europe lies in a broadleaf forest region. In a few places you will find cone-bearing trees. Rainfall, growing season, and altitude all help to explain why different kinds of trees are found in different places. In Europe the cone-bearing forests are commonly found in the far north, where it is always cool. How, then, do you explain why some cone-bearing trees are found in eastern France? What kind of forests would you say once covered the land in industrial western Europe where today you find very dense populations? As you may know, the soil and climate that are good for broadleaf trees are also good for crops. Use the map on page 16 to discover what vegetation grows naturally around your own home.

6. Now look at the map on this page. You see that the densely populated regions of industrial western Europe have two mineral resources. What are these two valuable resources? What kinds of work are suggested by the minerals? Do these occupations require many or few workers when done on a large scale? If you visited this region, what would you see in the landscape to show that the people do many different kinds of work?

State all the facts you have found that will help to explain why this part of Europe is able to support such a dense population.

## MANUFACTURING IN WESTERN EUROPE

Imagine that you are making an airplane trip over western Europe to see what the countryside looks like from the air, and to see what the people who live in the different parts of that region may be doing. It is im-

portant that you use the map on pages 58–59 as you study about the trip. You may start from Liverpool, a great seaport in western England, and fly southeastward to the Rhine Valley in western Germany. It is early sum-



mer. As you travel south across England, you look down on green pastures and fields of grain. You see many cities and villages. You see signs of mines and quarries that you know must supply coal, iron, and other minerals. Here and there the green fields and hills are blackened by smoke and soot. The countryside is dotted with blazing furnaces and smoking factories. Rivers and canals, airports and harbors, railroad tracks and roads form an interesting pattern of transportation.

On you fly across the English Channel to the mainland of Europe. Here you pass over a landscape similar to that of England. As you look around you, you see the things that are found in a manufacturing region. You see them in Belgium, in Luxembourg, in the Netherlands, and in western Germany. They are all a part of the landscape of industrial western Europe, where one of the world's greatest manufacturing regions extends from England eastward beyond the Rhine Valley.

**Manufacturing without machinery.** If you could have travelled by airplane over western Europe four centuries ago, the land-

scape would have seemed very different from what it is today. There were villages, but very few big cities. No smoke and soot blackened the fields and hills. No smokestacks rose from factories, and no railroad tracks crossed the countryside.

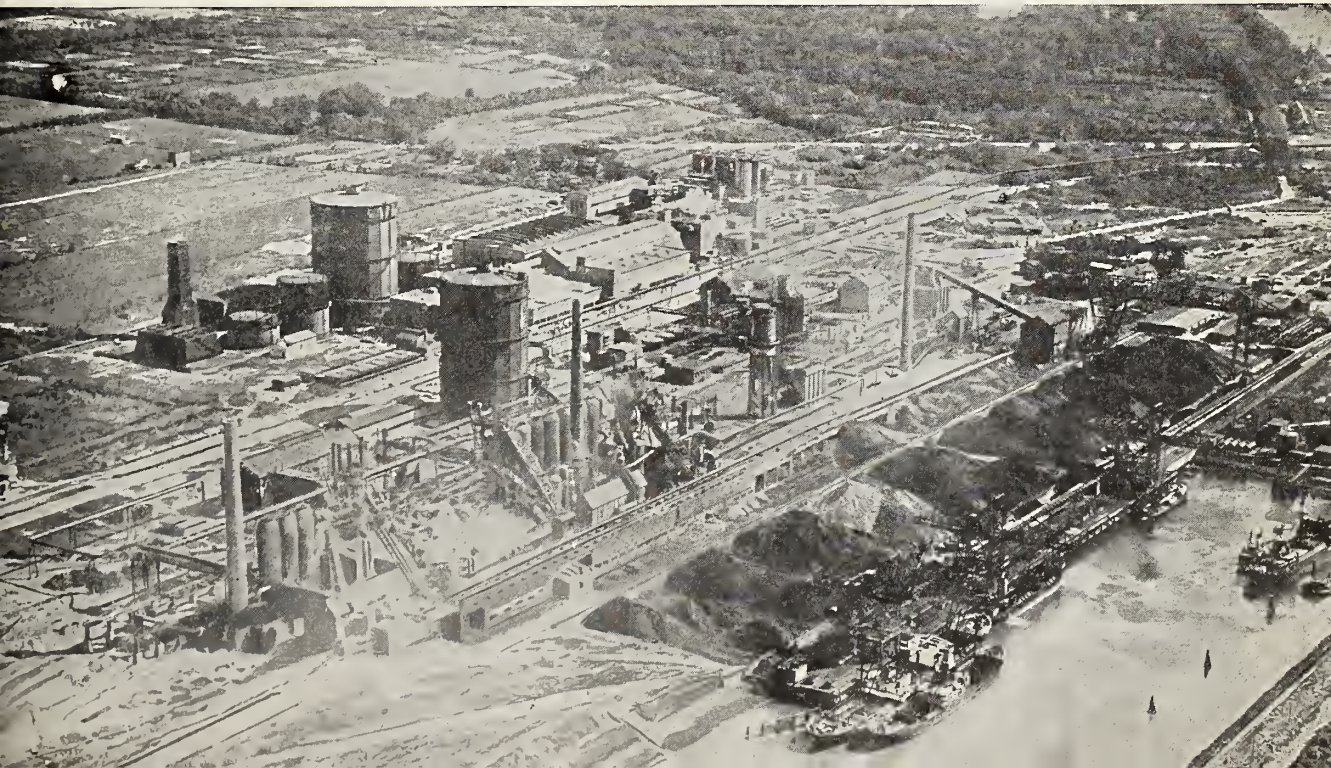
The farmers of that time made many things in their homes. They made many of their own tools and weapons. They sheared wool from their sheep, spun it into yarn, wove the yarn into cloth, and made their own garments.

Men did not know about the great sources of power that are used in factories today. In some places waterfalls supplied enough power for running small mills used for grinding grain. There were no steam or gasoline engines and no electric motors.

Gradually the workmen of western Europe became skilled craftsmen. They learned to make many useful and artistic things by hand with their simple tools. The English potters moulded clay and made beautiful dishes. The people of Belgium learned how to weave fine woollen cloth. At Lyon, France, craftsmen learned how to weave fine silk cloth. People also learned how to make better tools to help

**Looking down from an airplane on a manufacturing plant on the North Sea coast of the Netherlands.**

*Courtesy Netherlands Information Bureau*





them with their work. Skilled workers made fine furniture. Other craftsmen made clocks that would tell the time, thermometers that would tell the temperature, and compasses that would tell directions.

**Manufacturing with machinery.** The workmen of western Europe were making many useful and beautiful things more than four hundred years ago. But they were making them all by hand—a slow way. Then, about two centuries ago, some people in western Europe began to design machines to help do the work. We call such people inventors. They were trying to find ways of making things faster. Only by the use of machines could this be done.

About two hundred years ago, a man in England invented a machine that would spin yarn. This machine spun yarn much faster than did the old spinning wheels, such as you may have seen in a museum. Later, machines were made to weave cloth. A Frenchman invented a loom which would weave silk cloth more beautiful than any that had been woven by hand. Inventors also thought out ways of building furnaces that would turn out larger quantities of iron for making machines.

Power was needed to run the machines that men were building. At first water power was used to run the spinning and weaving machines, as it had been used earlier in mills for grinding grain. Nothing was known about making electricity at a waterfall and carrying it by means of wires to places where power was needed. Water power had to be used where it was found. As a result, factories were built along streams that supplied the power. Spinners and weavers and other factory workers settled near by.

About the same time that men in western Europe were inventing machinery for spinning and weaving, a man named James Watt made a steam engine. Then steam became another and a greater source of power for running machinery in factories. As the years passed, bigger and stronger machines were made and were run by steam power. With

the coming of machinery and steam power, manufacturing grew by leaps and bounds in western Europe. This was especially true in the great industrial belt which today extends from England across the Channel to France and Belgium and on into Germany.

### **How machinery changed ways of living.**

As power-driven machines replaced hand tools, people went to work in factories. These early factories were started by merchants who had enough money to provide buildings. They bought materials and tools for the workers who made goods for them. Gradually more and more machinery was invented and used. In time, bigger and bigger factories were built. Around the factories grew large and busy cities. All of these things brought about great changes in trade, in transportation, in farming, and in the home life of the people as well. These changes in living influenced the thoughts of the people, as well as their work. It may be difficult for us to understand the great changes that were made by machinery. We have always lived in a world of machines that supply us with food, clothing, shelter, transportation, and even with plays and games. Try to imagine how you would live if you had only simple hand tools.

The Industrial Revolution began in England about two centuries ago. Conditions there were most favorable for bringing it about. For one thing, England had a stimulating climate, a climate that was neither too hot nor too cold for thinking and working. England had iron for making machines and power for running them. It had swiftly flowing streams for water power, abundant wood for charcoal, and rich deposits of coal for the production of steam.

All of these advantages helped England to change rapidly from a farming region to one in which many people were engaged in manufacturing. It became industrialized. The change from handwork to machinery soon spread to other parts of western Europe that had similar advantages. The same conditions



*Courtesy Netherlands Information Bureau*

**A well-equipped modern coal mine in the Netherlands. This mine is one of the many mines operated in the rich coal fields extending from France to the Rhine Valley.**

that favored the Industrial Revolution nearly two centuries ago continue to make western Europe one of the great industrial regions of the world today. We shall now study some leading industries developed in that area.

## Coal, Iron, and Steel

Today we live in a world of iron and things that are made of iron. Steel, as you know, is made of iron. Men must have steel to make automobiles and trucks. They must have steel to build great skyscrapers and strong bridges. They must have steel to make knives, tools, and hundreds of small articles that we use every day.

**Steelmaking and a dense population.** In order to make steel from iron ore, men use coal and other materials. Coal is needed for making coke, which, in turn, is needed for smelting the iron ore. The great blast furnaces where the iron ore is smelted are filled with layers of coke, limestone, and iron ore. The coke supplies the intense heat needed for separating the iron from the impurities. The limestone unites with the impurities from the iron ore and rises to the top of the fur-

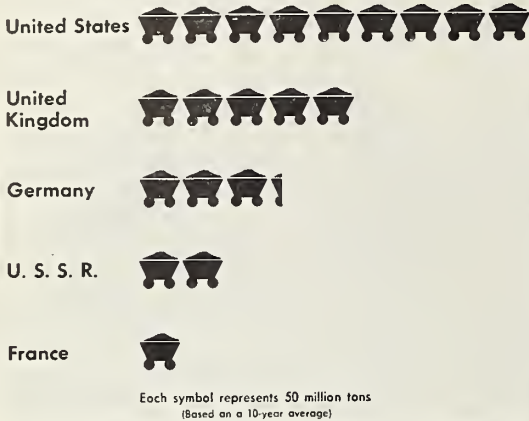
nace. The iron, being heavier, sinks and runs out from the bottom of the furnace. This product of the blast furnace is called pig iron. To make steel, the pig iron is heated again in special furnaces. Many different kinds of steel are made for special purposes. This is done by adding other ores or chemicals in exact amounts to the pig iron.

How well is industrial western Europe supplied with the things needed to make steel? The map on page 62 shows that there are many iron fields in that region. One of the richest iron fields in the world is in eastern France and Luxembourg. Other important iron deposits are found in England, Belgium, and Germany. The map also shows that industrial western Europe is well supplied with coal. It is almost as if one great coal field extended eastward from northern France across Belgium and the Netherlands into the Rhine Valley. Beds of good coal are also found in the British Isles, especially in England, Scotland, and Wales. Moreover, in western Europe are found abundant supplies of limestone.

The steel industry, perhaps more than any other industry, has supported the dense population of industrial western Europe, especially

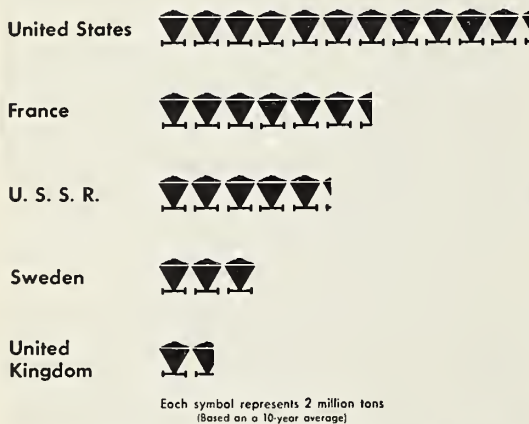


### The Five Leading Coal Producing Countries



Pictograph Corporation

### The Five Leading Iron-ore Producing Countries



Pictograph Corporation

How do these diagrams show that the world's leading industrial countries need each other?

in southern England, northern France, eastern Belgium, and the Rhine Valley in western Germany. In industrial western Europe coal, iron, and limestone are found close together, and there are many mines and steel mills. Here iron and steel are made into machines for factories and farms, and into tools for every type of work. Here locomotives, cars, and rails for railways, and ships for the ocean commerce of the world are built.

**Two great steel districts in the British Isles.** Look again at the map on page 62 to see where iron and coal are found in the British Isles. The diagrams on this page will show you how the United Kingdom, which includes England, Scotland, Wales, and Northern Ireland, ranks with other important countries of the world in the amount of iron and coal produced. Judging from these diagrams, would you say that the United Kingdom is well supplied with iron? From what countries of Europe might it import iron? Does it have large or small supplies of coal? The map and diagram together suggest two possible reasons why the United Kingdom ships coal to many European countries. Can you give these reasons?

One great iron- and steel-manufacturing district lies in central England near the city of Birmingham. Here iron and coal are found close together, as you may see by turning back to the coal and iron map. Birmingham was a famous ironmaking centre long ago. At first iron ore was smelted in small furnaces, and charcoal was used for fuel. Forests near by supplied the wood from which the charcoal was made. Later it was learned that coke made from coal was the best fuel for smelting iron. Then the coal fields near by gave Birmingham a great advantage for making iron and steel and helped it to become the greatest iron and steel centre in England.

In the Birmingham region today, huge factories make locomotives, automobiles, hardware, and so many small articles that we cannot name them all. Birmingham specializes in manufacturing a great variety of small articles that require much work. These can be easily and cheaply transported. Locomotives and automobiles move away from the factories on their own wheels.

Another great British steel district is found in southern Wales, where the abundant deposits of high-grade coal are mined along the sides of deep, narrow valleys. These valleys open toward the sea. Rows of miners' homes line the roads and railroads which lead to the ports of Cardiff and Swansea. On the map



*Courtesy Government of the Grand Duchy of Luxembourg*

Large steel mills are a typical sight in industrial western Europe. This mill is located in Luxembourg, one of the smallest countries in the world, in a region where there are many iron mines and factories.

On pages 58-59 you can find these seaports of southern Wales. Both of the cities ship coal to other countries, particularly for the use of steamships. Both use large quantities of coal in their own factories. In both, large quantities of iron, copper, zinc, and lead are smelted. Most of these ores are brought to Wales from other countries. Iron is imported from Spain and Sweden. Copper is brought from Chile and Spain, tin from Malaya, nickel from Canada, and zinc from Australia. We must not forget, however, that the presence of coal is necessary for the smelting industry of these great industrial centres near Birmingham and in Wales.

Canada, too, has large supplies of iron ore. You have no doubt heard about the rich deposits along the border between Quebec and Labrador. As these mines are developed Canada should become a great producer of iron and steel. We still, however, import large quantities of iron and steel products even from as far away as Britain. Perhaps some of your neighbors drive automobiles that have been made in Britain.

**Big steel mills in little Belgium.** On a map of Europe, Belgium appears as a small country, but its boundary lines enclose deposits of coal, iron, zinc, and sand. These helped Belgium begin its industrial career.

In later years iron was bought from France and Luxembourg. Coal of better quality for smelting was bought from Germany. Copper was supplied from mines in the Belgian Congo, in Africa. At the present time, some of Belgium's important industries depend mainly upon the importation of both fuel and raw materials from other countries.

Find the Meuse River on your map. The valley of the Meuse is the district of greatest industrial activity. Blast furnaces, foundries, and machine shops have been so numerous in the Meuse area that it was sometimes called a forest of factory chimneys. Metal works, glass factories, and chemical works are examples of *heavy manufactures* which developed there. Heavy manufactures require large quantities of raw materials and fuel. The products are bulky and heavy. You can see why such industries require much ground space for large factory buildings and for the storage of raw materials and finished products. Railroad sidings must often be built into the factories. Two centres of heavy manufacturing in Belgium are Liège and Namur. What other heavy manufacturing areas have you studied? Belgium has a short coast line, but it has one deep and roomy harbor on a river which empties into the North Sea. The port at this harbor is Antwerp (native name, Anvers).



**Lorraine iron and steel district.** One of the world's greatest iron-mining regions is in eastern France, in Lorraine. Here the iron deposits lie deeply buried in the earth between the cities of Metz and Verdun. Keeping in mind the importance of this iron field, turn to the map on pages 58-59; locate Lorraine and the cities of Metz and Verdun. The Lorraine iron deposits extend north and east from France across the borders of Belgium and Luxembourg. They help to make both of these countries important centres of steel-making and manufacturing.

England, Wales, Belgium, and Germany all have large supplies of coal. France, on the other hand, has only small supplies. The Lorraine iron field, which lies mainly in France, is within easy reach of coal beds that lie to the north, chiefly in northern France and western Germany. Moreover, an abundance of limestone is quarried near by. Thus the Lorraine district in France, like the Birmingham region in England and the Meuse Valley in Belgium, is a place where the raw materials and fuel that are needed for making iron and steel are brought together. As a result, most of the blast furnaces and steel mills of France are located in or near Lorraine. Big iron and steel works are found in Nancy, in Metz, and in many towns and villages in that locality. The steel industry helps to support the dense population of the Lorraine district in France. In the past, people from Italy, Germany, and Belgium have moved to eastern France to work in these iron and steel mills. Lying as it does across the boundary lines of three countries, this great industrial area has been a battleground of western Europe for generations.

**The steelmaking Rhineland.** The Rhine Valley of Germany is one of the great industrial areas of the world. Why is this area likely to continue as a beehive of industry, as a cluster of cities and factories? The answer is coal. The Ruhr River has cut its valley through the richest coal field in Europe. The coal from this rich field is the basis of the

great iron and steel industry which developed in the Ruhr Valley and in the Rhine Valley.

Though the Ruhr area is only about fifty miles across, it has a population of six million people and can produce almost as much steel as Britain. In the Second World War it was almost completely destroyed. Its destruction injured trade at Rotterdam, Amsterdam, and Antwerp. Miners in France and Sweden had less work. Industries in Switzerland and Italy needed Ruhr steel. So many people depended on Ruhr industry that in a few years it was as busy as ever before.

Another rich coal field is found where the rolling hills of the Rhineland meet the plain of the Lorraine area. It takes its name from the Saar River and is called the Saar territory. Forests of chimneys rise above the land. But there are forests of trees, too. The region became highly industrialized. It became crowded—so crowded that more than a thousand people lived in each square mile. Most of the people who live in the Saar territory work in the mines or in the industries that depend on the mines.

You can easily see that the people of the Rhineland have plenty of coal. It comes to them from the Ruhr and from the Saar. But there is little they can do with coal alone. They need iron also. The situation in the Lorraine district is different in one important respect. There the people have iron. But they don't have enough coal.

This coal and iron region is actually one unit, even though it is shared by different countries. Factories and blast furnaces cluster together, and countries depend upon one another for the materials they need. They exchange minerals, and each gets what it needs. You may have heard that the countries sharing this great iron and coal region are making plans to coöperate with one another. Through coöperation, the people of all the countries benefit. By helping one another, they help themselves.

**Some famous shipbuilding centres.** The people of western Europe depend upon sea

trade for part of their food supply and for many of the raw materials for their factories. And they need ships to carry these things. Some of the ships are small; others are huge.

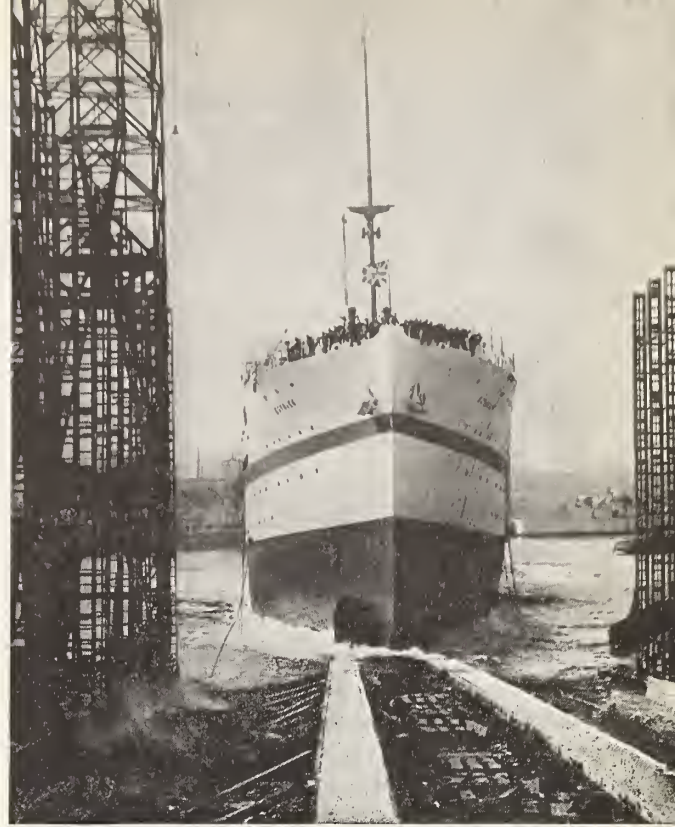
In the old days, ships were built of wood. Forests of tall, strong trees were important to shipbuilding. Today another material is important. That material is steel. A shipyard's greatest need is steel.

But more than steel is needed in shipbuilding. Some of the large ships are like floating hotels, and they are as completely equipped as hotels. Materials from many different factories are brought together in the shipyards. Equipment for lighting and heating, for kitchens and dining rooms, for bedrooms and bathrooms must be brought to the shipyards. Stop to think a moment of the many, many things that would be needed on a ship far out at sea. Remember that you could not run out to the corner store for things you had forgotten. You would have to have everything you might possibly need right on the ship with you.

You can see that it would not be an easy job to get all these things together. This is the problem shipbuilders must meet. They must decide exactly what they need, they must order the materials, and then they must have these things assembled according to carefully made plans.

Some locations are better than others for bringing these materials together. The necessary steel mills and factories may be near by. Transportation may be good. But newly made ships must be built at places where they can easily slide into the water. Some ships are small, and they can be built near shallow water. Huge ocean liners cannot be launched unless the water is deep.

Find the Clyde River in Scotland on the map. This river has a deep, roomy estuary. On it is located the city of Glasgow, with its many blast furnaces and different kinds of factories. You can see on your map that railroads connect Glasgow with other industrial districts. Here we see an excellent location for shipyards, and here we find more than



*Courtesy British Information Services*

**A great ocean liner slides down the ways into the deep water of the Clyde River.**

thirty shipbuilding companies. Such great ships as the famous *Queen Mary* and *Queen Elizabeth*, ships more than a thousand feet long, were launched at Glasgow. Shipbuilding has brought many people to this city. As a result, Glasgow has become an industrial and commercial city of more than a million people. Its shipyards alone employ thousands of workers. Its shops make machinery, not only for ships, but for mills and factories located all over the world.

There are many other shipbuilding centres, such as South Shields and Sunderland, near Newcastle in England, and Belfast, on the coast of Northern Ireland. What advantages for shipbuilding are suggested by the maps on pages 58-59 and 62?

Shipyards are found in other parts of western Europe, too. There are suitable harbors along the coast of the Netherlands. The Dutch, as the people of this country are called, know the sea well. They began to build sea-going ships long, long ago. They traded and



explored. Even though most of the steel used in the Netherlands must be imported from other countries, shipbuilding continues to be an important industry.

Now find the Loire River of western France on your map. There are two important shipbuilding cities on this river. The names of these cities are Nantes and St. Nazaire. In northern France, near the English Channel, find the city of Caen. Here, too, you will find busy shipyards.

## Textile Industry in Western Europe

In western Europe some of the land is too rough and hilly to be cultivated. As a result, such lands are left in pastures, and large numbers of sheep are raised. The map on page 71 shows that sheep are especially important in the British Isles and in some of the rougher and drier parts of France. From early days, industrial western Europe has produced wool, which is one of the raw materials needed for making textiles.

Another raw material for textile mills is flax. On some lands that are too cool and wet for grain to grow, the farmers raise flax in their fields. This has long been an important crop in Northern Ireland, in northern France, and in Belgium.

**Sheep grazing in an English cathedral town. In the distance rises the great tower of the cathedral.**



**Early weavers.** Long ago, workmen in western Europe began to use wool, flax, and silk for making cloth. England was famous for its woollen cloth, even when there were no factories, and spinning and weaving were done at home. In early days Flanders was famous for its skilful weavers. This important region was located in northeastern France and extended eastward into Belgium. Long before machinery was made, the people of Flanders were known throughout Europe for their excellent woollen, linen, and silk cloth. Some of the wool used by these famous weavers was imported from England.

**From home to factory.** Today the manufacture of woollen goods is one of the great industries of industrial western Europe. As long as cloth was woven by hand in homes, it could be made anywhere. Therefore, the manufacture of woollen cloth was spread all over the countryside.

Then came machinery. Factories were built, and the manufacture of textiles grew by leaps and bounds. There were machines that spun many threads at once, and machines that wove the thread into cloth.

The steam engine was invented about the same time as machinery for spinning yarn and weaving cloth. Soon steam engines were put into factories to supply the power needed.

All this increased the demand for wool, and the raising of sheep became more and more profitable. Coal became an important source of power. The machines driven by steam could be larger than machines run by water power. Larger buildings were required. Great woollen mills, as well as mills for making other textiles, were built near coal fields. Big cities where the workers lived grew up around the mills. This will help explain why the woollen industry in western Europe is no longer widely scattered but is centred in a few large districts.

W. H. Freeman



A map showing where sheep are raised in lands overseas.

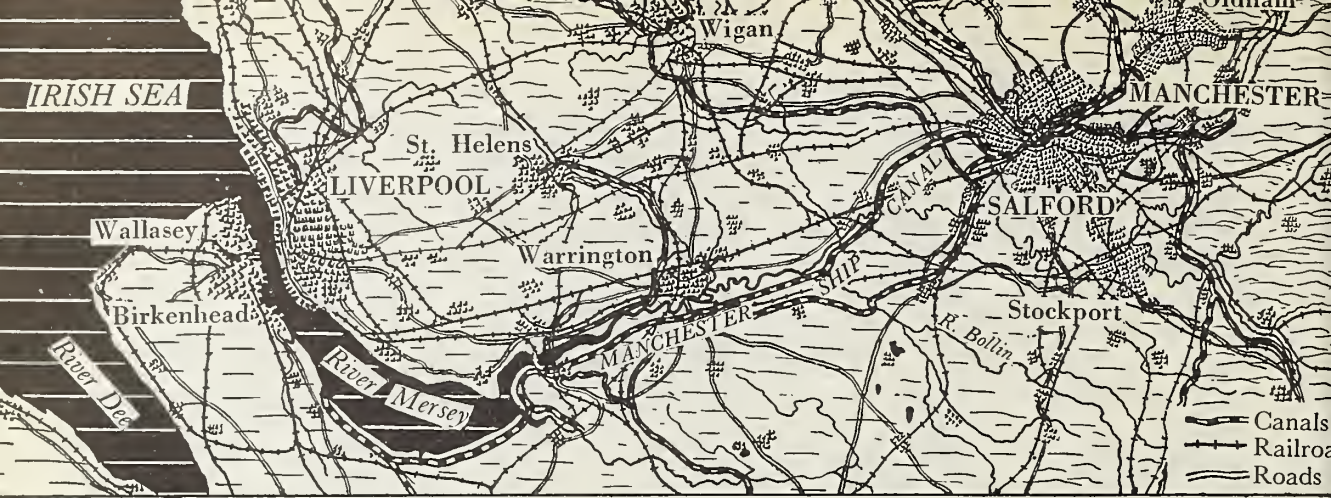
In England today the woollen industry is centred largely around the cities of Leeds and Bradford. You may wonder why big woollen mills started in these places. If you turn to the map, you can see that Leeds is near a rough country called the Pennine Hills. Bradford, the smaller city, is not shown on the map. Swiftly flowing streams from the hills supplied water power for running the machinery of the early mills. The soft water of these streams was good for scouring the greasy wool and for bleaching and dyeing cloth. Some of the wool used in the mills was bought from country folk who kept flocks of sheep on the hills. But this wool was of poor quality, and even in the early days much had to be bought elsewhere. In other parts of the British Isles, especially in southern England, in Scotland, and in parts of Ireland, wool of good quality

is produced. Today most of the wool is imported from countries of the Southern Hemisphere, chiefly from Argentina, Uruguay, New Zealand, and Australia. When steam engines took the place of water wheels, Leeds and Bradford had the advantage of being near coal fields. The mines supplied fuel for the engines, and water from the streams was still used for scouring and bleaching.

If you were to visit Lille and Roubaix in France, Ghent (Gand) in Belgium, and many other cities of industrial western Europe, you would find that they, too, have large woollen mills. All these woollen-manufacturing centres are near coal fields, as you may see by looking at the map on page 62.

One woollen-manufacturing centre in north-eastern France is the city of Reims. As you see on the physical-political map, Reims lies





A map showing the ship canal which connects Manchester with the Mersey estuary.

in a section of France known as Champagne. There are many ridges and cliffs in this region. It has wastelands, with here and there a growth of pine trees. The soil is thin, and under it in some places there is a kind of limey rock called *chalk*. This chalky bedrock is so porous that the water seeps down through it quickly after a rain. As a result, much of the Champagne country is too dry for raising crops, but in most places the surface is covered with short grass. Because of the dry soil, the grass is too short for cattle, but it furnishes enough pasture for sheep, and large numbers are kept. As you may know, sheep can live on grass that is too short and scanty for cattle. The sheep that graze on the chalky lands in the Champagne region supply wool for the mills at Reims and other near-by manufacturing towns in that area.

### **Making cotton goods in western Europe.**

In England, the manufacture of cotton goods is even more important than that of woollen goods. There is one important difference, however, in the supply of raw materials. All the cotton is brought in from other countries. The summers are too cool and the growing season is too short in England for cotton to grow and ripen.

The British cotton industry centres around the city of Manchester, just west of the Pennine Hills. Do you know why?

In the first place, Manchester is conveniently situated for receiving cotton sent from the United States and other places. Manchester is connected with the estuary of the Mersey River by a canal, as you can see by looking at the map on this page. Thus cotton can be brought directly to Manchester by boat.

In the second place, the westerly winds help to explain why cotton manufacturing had a successful beginning in the Manchester region. Blowing from the ocean, these winds bring moist air. Moist air helps to prevent the cotton threads from becoming dry and breaking easily. Now the amount of moisture in the air in cotton mills can be controlled mechanically, but this was not possible in the early days.

In the third place, Manchester can obtain coal from deposits near by. The map on page 62 shows coal fields on both sides of the Pennines. The coal field on the east side supplies power for the woollen mills at Leeds and Bradford, while the one on the west supplies it for the Manchester cotton mills.

In the fourth place, as you have already learned, the streams of the Pennine Hills furnish soft water especially suitable for washing wool and bleaching cloth.

In eastern France, between the cities of Nancy and Mulhouse, there is an important cotton- and woollen-manufacturing region.

Several natural advantages have favored the growth of the textile industry in this area. In the first place, the steep slopes of the mountains have many small but swift streams which are used to supply electricity to run machinery in cotton and woollen mills. In the second place, the region has been helped by the Saar coal field, which extends from Germany westward into France. In the third place, a dense *rural* population in the area supplies plenty of workers for the mills. People who live in villages or on farms are called rural people.

**Linen mills.** Linen is made from flax, which grows well in the cool, moist climate of western Europe. A long time ago, flax grown in northeastern Ireland made the manufacture of linen important there. Gradually Irish linen gained the reputation of being the finest linen in the world. The making of linen, like the making of cotton and woollen cloth, began in the homes of the workers. Later, when machines were invented, the industry moved from the homes to factories. The linen industry of today is located chiefly in the cities of Belfast and Londonderry, in Northern Ireland.

Some of the finest flax in the world is grown on the plains of Flanders in northern France and Belgium. The climate here is cool and moist, and the soil is well suited to growing flax. Hundreds of years ago this region was famous throughout Europe for its fine linens, woollens, and silks. The weavers of Flanders, who were masters of their art, carried their knowledge into neighboring lands. In fact, the textile industry in the British Isles was helped greatly by early weavers who came across the English Channel from Flanders. Lace, embroidery, and other kinds of linen goods made in Belgium and northern France are still famous all over the world.

So much flax is used by the linen mills of northern France, Belgium, and Ireland that the farmers cannot supply all that is needed. Study the map on page 246. If all the countries of Europe were friends, what farmers could supply flax to these mills?

## Manufacturing Pottery

Northwest of the city of Birmingham, in the valley of the Trent River, there is a region called the Potteries. The region has been given this name because from early days down to the present time it has specialized in all kinds of pottery: cups, saucers, and plates of the cheaper kind; delicate and expensive chinaware; crockery of all kinds; and tiles and bricks, from the cheapest to the most expensive varieties.

**The growth of the Potteries.** At one time there were six different towns in the Potteries. These towns lay close together. Gradually they grew larger and larger. Finally all six towns united into one city since known as Stoke-on-Trent.

What advantages helped Stoke-on-Trent to become a pottery centre? In the first place, the making of pottery got an early start here. The farmers in the valley of the Trent began to make pottery long ago, largely because they found the clay in this region well suited for pottery. Some of the potters became skilful and interested and began to devote all their time to pottery making. As the industry grew, it was an advantage to have plenty of coal for fuel for the *kilns*, or the ovens where the pottery is baked to make it hard.

Clay and coal were very important. But perhaps even more important was a man named Josiah Wedgwood, a famous English potter who came to the valley of the Trent about two hundred years ago. He greatly improved the methods of making and decorating pottery. It was largely through the efforts of Josiah Wedgwood that English pottery has become famous in countries all over the world for its fine quality and beauty. Wherever people live, they are proud to possess Wedgwood pottery.

Today, however, the clay around Stoke-on-Trent is no longer used for making pottery. An almost pure, white clay called *kaolin*, or "china clay," has been found in the Cornwall country of southwestern England. Other fine



clays are brought by sea to Liverpool and taken by canal to the Potteries. Thus Stoke-on-Trent is still the most important pottery centre in the British Isles, even though it must depend on outside sources for the clay it uses.

Artistic porcelain and fine tableware are also made in France. In the city of Limoges, on the western slope of the Central Plateau, Haviland china is made from kaolin. This clay is found in the near-by plateau. Another beautiful kind of china is made in a suburb of the city of Paris.

Though the Netherlands has factories, the country has little coal and few raw materials. One raw material which it has in abundance is clay suitable for making brick, tile, and pottery. The large supplies of clay help to explain why the chief buildings in most of the cities in the Netherlands are built of bricks. The Dutch have long been famous for making a kind of tableware called Delftware. It is called by this name because it has long been made at the small town of Delft near The Hague ('s Gravenhage).

In Belgium, the pottery industry is carried on in the industrial section of that country in the valley of the Meuse. This valley, as you will remember, has many other kinds of

factories and mills. It is a region with a dense *urban* population. In other words, the people of this valley live and work in cities.

Most of the china sold in this country is imported from these countries in western Europe because in Canada we have discovered only a few small deposits of high-grade china clay. However, a few Canadians make pottery that is world famous. How many of you know of Dykeland's Pottery? It is made near Saint John, New Brunswick, from a mixture of local and Nova Scotia clays. Mr. and Mrs. Deichmann who make this pottery, have won prizes with their products at exhibitions in many parts of the world.

## PRODUCTS OF

### INDUSTRIAL WESTERN EUROPE

You have been reading about some of the most important manufacturing industries in industrial western Europe. You will find others mentioned in this section of your book. For example, many food products are made in every country. In each country textiles and clothing are made.

A great many manufactured products from industrial western Europe are exported to the Canadian market. See if you can find some of them in your own community. If you begin now to look for such products, you will probably have a good collection before you have finished studying this part of Europe.

Here are suggestions for a collection. Many people have dishes from England, Ireland, France, or the Netherlands. In a drygoods store or a tailor shop you may get samples of textiles made in western Europe. Someone may have lace from Belgium, gloves from France or England, or a handkerchief of Irish linen. Grain bags made of jute woven in Scotland are in use on many farms. If you find a knife or a pair of scissors stamped "Sheffield," it was made in England.

Your grocery store may have food products from industrial western Europe; for example, cheese and candy from France and the Netherlands and orange marmalade from Scotland.

Ask the group studying the social environment to prepare a map of industrial western Europe for your display board. On this map mark the name of the place in which each product in your collection was made.

**China is put in a kiln for firing at Limoges. Western Europe is famous for skilled craftsmen.**

*Courtesy French Press and Information Service*





*Courtesy British Information Services*

These fields in western England show how intensively the good farm land is cultivated. You will notice the pattern of many small fields divided by hedgerows and trees.

## FARMING IN WESTERN EUROPE

If your study of western Europe were to end now, you might think that it is only an industrial or a manufacturing region. The work of millions of people is connected with manufacturing. But millions of other people are engaged in agriculture. Western Europe is not only a great industrial area. It is one of the great farming areas of the world.

**Conditions favorable for farming.** There are many natural conditions that affect farming. The height and slope of the land are important, and so is the fertility of the soil. There must be enough rainfall during the growing season. The frost-free season must be long enough and there must be enough hours of sunlight each day to allow the crops to grow and ripen.

You have already learned that western Europe has a variety of surface features. More than half of this great region is made

up of fertile lowlands that make good farm land. Only the highest land has a growing season too short for most varieties of middle-latitude crops. The west winds bring clouds and rain to the land. Over most of western Europe, the rainfall is from 20 to 40 inches, as is shown on the map on pages 12-13. In most areas, the rainfall is well distributed throughout the year.

A wide variety in surface features, in soils, and in climate makes it possible to grow many different crops. In western Europe, farmers have fine fields of wheat, as well as good fields of rye and barley. They raise wonderful crops of potatoes, and they grow more sugar beets than we grow in our big country. There are thousands of acres of vineyards. Millions of beef and dairy cattle graze on some of the finest pastures in the world, and millions of sheep are raised on the rougher and more hilly lands.



### How dense population affects farming.

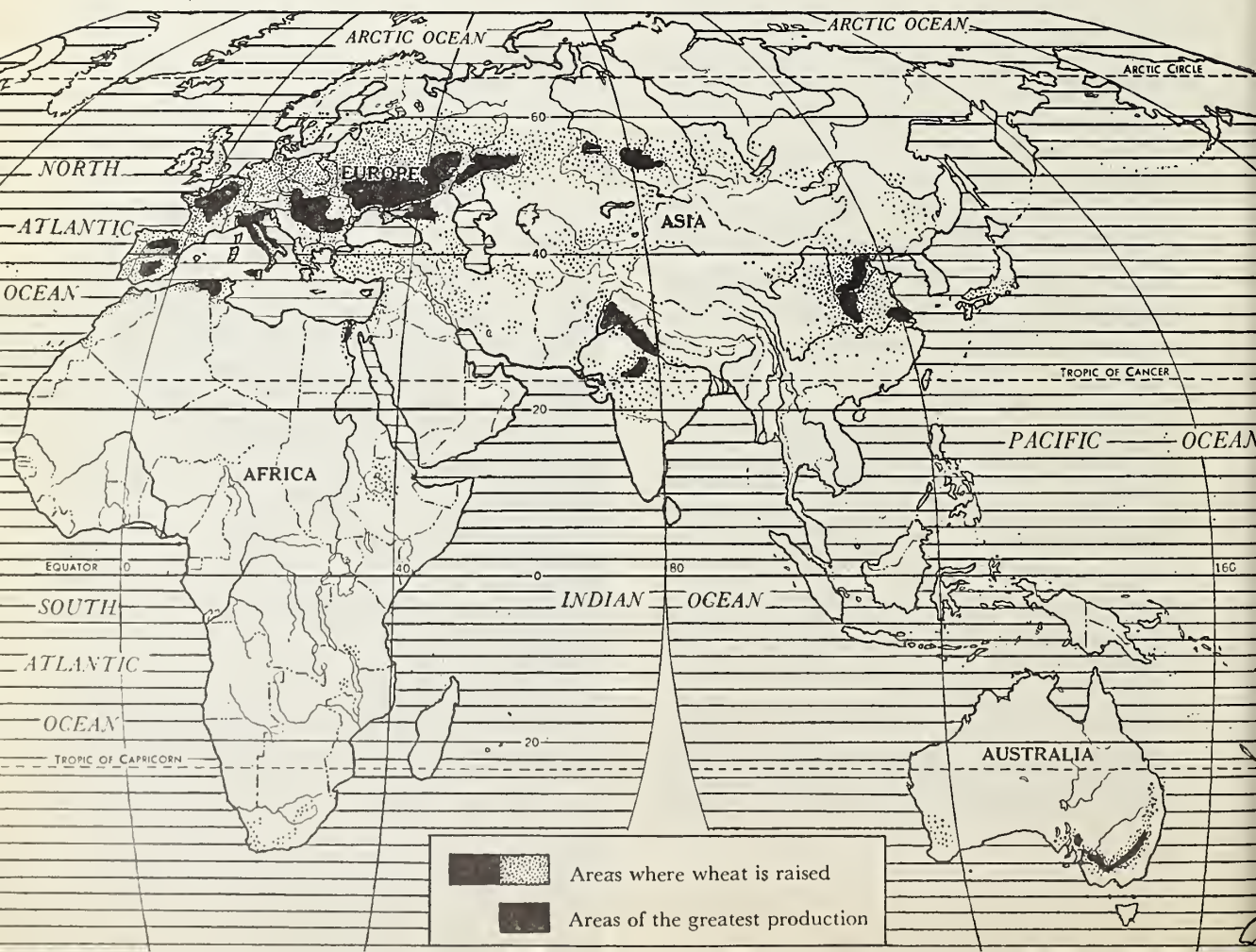
Farming becomes *intensive* in densely populated regions where millions of people live in cities and make a living by manufacturing. The farmers must make each acre of land yield an abundant harvest. They prepare the soil with care and often use large quantities of fertilizer. They select crops that will be most productive on the land. At the same time, they produce the foods that are needed by the people in the cities. Small plots of land, often cultivated by hand, are used for growing vegetables to sell fresh in near-by markets. Other plots may be used for raising such things as flowers for the city markets or flower bulbs for home and foreign markets.

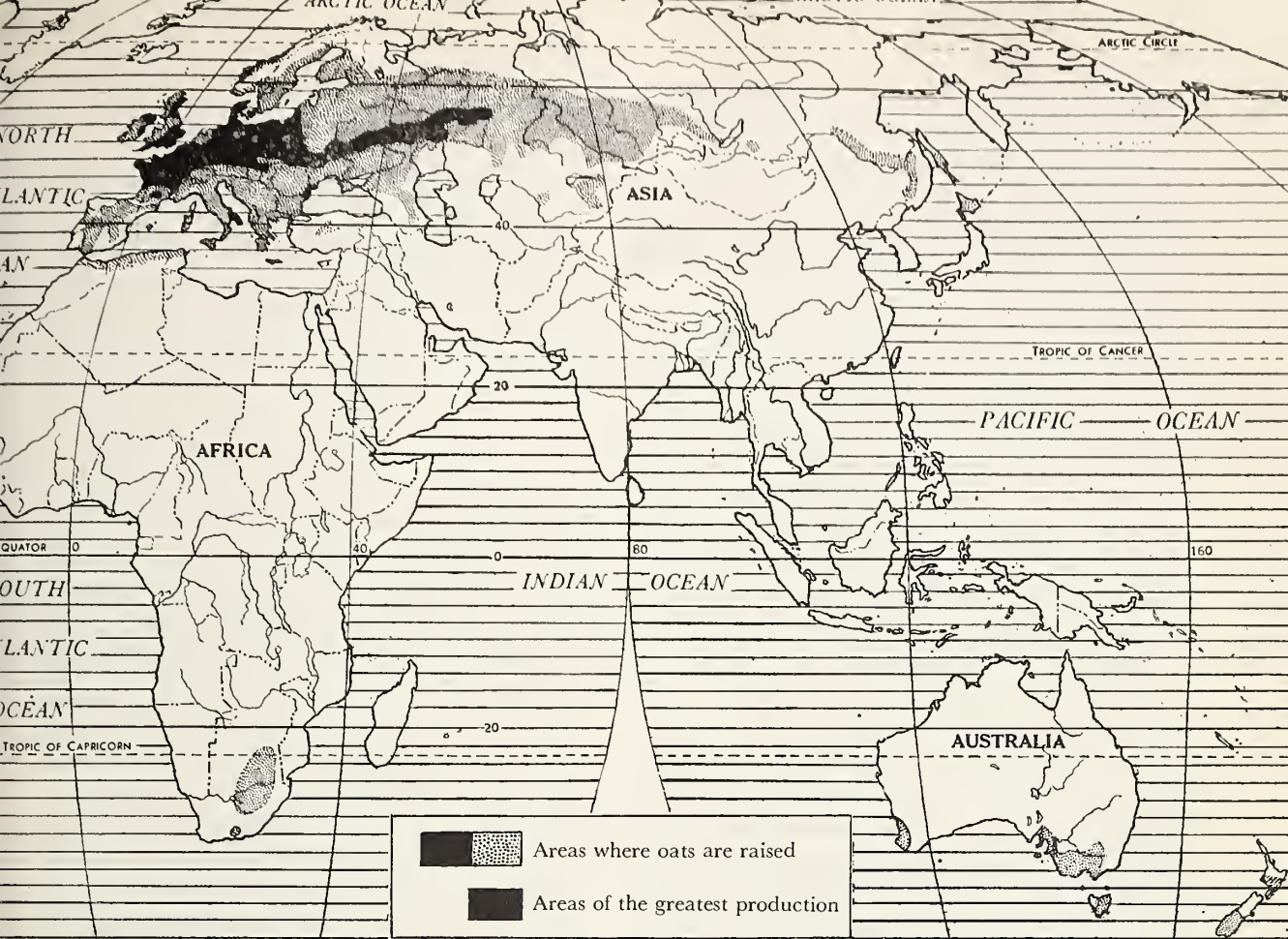
Many farmers raise hay and keep dairy cows. It is amazing how many cows can be kept in such crowded lowlands as those in Belgium, in the Netherlands, and in northern

France. Fields and meadows are small, but hay for winter feed is grown almost everywhere. In many places the tiny fields are not even separated by fences, because fences take space that is badly needed for crops and pastures. Crops are planted right to the edges of the roads and canals, so that very little land is wasted.

Industry influences the farmer in the use he makes of his land, and often it adds directly to the family income. Handmade lace and embroidery are made in many of the farmhouses of Belgium. Wooden shoes are made in farm homes of the Netherlands. Large quantities of linen, cotton, and woollen goods are now made in factories. These factories are gradually spreading to the crowded rural districts where labor is abundant. There farmers find work to add to the family income during seasons of idleness on the farm.

A map showing where wheat is grown in lands overseas.





A map showing where oats are grown in lands overseas.

**Wheatlands in western Europe.** Fertile soil, about 25 inches of well-distributed rainfall, winters that are not severely cold, and plenty of summer sunshine—these are the conditions favorable to high yields of winter wheat. Much of industrial western Europe has these conditions, so wheat grows well. You can see on the map on page 76 how true this is. In some places, however, the land is too mountainous and the fields are too stony for wheat. In other places the summers are too wet and there is not enough sunshine for wheat to ripen and mature.

In the British Isles there is only one region where wheat grows well. The map on page 76 shows that this good wheat region lies in east-central England. Turn back to the map on pages 12–13 and find the areas that have the lightest rainfall. Notice that the driest

lands raise the most wheat, while the parts that have the heaviest rainfall raise almost no wheat at all. The best wheat-growing regions in the Dominion of Canada are found in the Prairies. Do you remember what you learned about these regions? Do they have a heavy or a rather light rainfall?

Look at the map on pages 58–59 and notice that the wheat region in England has an elevation of 0 to 500 feet. Here it is easy to use farm machinery, for the land is gently sloping. This is another good reason for the raising of wheat in eastern England. Not very often will you find large fields of wheat in hilly lands where the grain must be planted and harvested by hand.

You may wonder why there is so much level, fertile land in eastern England. Turn to the map and notice on the east coast a bay



called the Wash. Around this bay for many miles there was once a great marsh called the Fens. Now most of this marsh has been drained and is level, fertile farm land. All of this drained land in the country around the Wash is a part of the wheat-growing country of England.

This piece of rich, level land is sometimes called the breadbasket of England. But here there are too many people and too little land. In this small area it is not possible to raise enough wheat to supply bread for all the British people. They depend on other countries for most of their wheat. England imports almost four times as much as it grows. Do you know the names of some countries that grow more than they need?

There is one region in northern France in which wheat grows especially well. Turn to the physical-political map and find an area of low-lying land in the valley of the Seine River. Because it is shaped somewhat like a shallow washbasin, and because the city of Paris is near its centre, the region is called the Paris Basin. It is one of the finest farming areas in the world. Ages ago, what is now the Paris Basin was under water. It was covered by a sea, at the bottom of which were limestone and mud. Slowly, very slowly, the bottom of the sea rose. The soil made from this limestone is so rich that it sometimes produces enough wheat to supply bread for all of France.

Not only are the natural conditions of France suitable for wheat, but the government has encouraged the farmers to grow it. When cheap wheat is imported from a foreign country, a high tax must be paid on it. Buyers must pay for the wheat and must pay the tax, too. This increases the price of imported wheat so that it may be just as cheap to buy wheat grown in France. Because of this tax on imported wheat, French farmers are able to sell their tax-free home-grown wheat at good prices.

Wheat is raised, not only in the Paris Basin, but also in most other parts of France, as you may see on the map on page 76. On

some of the highlands, however, the soil is too thin and stony and the climate is too cool and wet for wheat to grow well.

In the Netherlands and Belgium very little land is used for wheat, but yields of wheat on each acre are high. The yield in these two countries is nearly forty bushels per acre. No other countries in the world have so high an average yield. Thus in North America the average yield is only about fourteen bushels per acre.

You may wonder why the yields of wheat are so high in the Netherlands and Belgium. These high yields are due mainly to intensive farming, which, as you know, means making every acre of land yield as much as possible. The high yields, though, do not make wheat growing profitable in the Netherlands and Belgium. Farmers can obtain such high yields only by using fertilizer, which is expensive. To make money, they must sell their wheat for a high price. It does not cost so much to raise wheat in the broad, thinly settled lands of North and South America and Australia, where the soil is naturally fertile. Then, too, in these large countries wheat is grown on a large scale, with modern machinery and less labor. This wheat can be brought to Belgium and the Netherlands and sold at a lower price than wheat raised in those countries. We may say it this way: "Imported wheat competes with home-grown wheat." It is more profitable, then, for the people of these countries to buy wheat and raise such crops as hay or potatoes. Why are these good crops for this area? You will soon see why they are.

**Cool-climate crops.** Summers that are too cool and rainy for raising wheat are good for growing certain other crops. In western Europe, farmers have learned to select crops that are suited to the climate and the soil. For example, oats grow well in areas that are too cool and wet for wheat. Thus in Ireland, Scotland, and eastern England more land is used for oats than for any other grain. You can see this on the map on page 77.



A map showing where rye is grown in lands overseas.

Two other grain crops, rye and barley, will ripen in a short, cool growing season. Both can be raised on poor soils. The product maps on this page and on page 80 show you that they are raised in many parts of industrial western Europe. More rye and barley than wheat are grown in the highlands of the Central Plateau and western France, in the hilly land of eastern Belgium, and in the highlands of Scotland. Thus we can see how the natural environment limits the choice of crops that the farmers of a region can grow well and profitably. So, of course, it also limits the choice of things to eat.

**Potatoes and their uses.** The original home of the potato was high up on the Andean Plateau in South America, where the climate is always rather cool. Potatoes were

first taken from America to Europe by the Spaniards. They did not do well in the warm, dry climate of Spain. When finally they were planted in cool, rainy Ireland, they grew so well that ever since many people have called them Irish potatoes. No doubt you have Irish potatoes with many of your meals.

Potatoes are a good crop for crowded lands because they supply much food from small patches of ground. They are not so nourishing as wheat, but about ten times as many bushels can be grown on each acre. Many uses have been found for potatoes. They are food for men and feed for livestock. In factories they are made into flour, starch, and many other products. Potatoes, then, offer one solution to the problem of feeding the vast numbers of people living in the densely populated lands of industrial western Europe.



But potatoes do not keep so well as cereals. Why is this a disadvantage?

**Sugar-beet lands.** While many plants contain sugar, only two are used for producing it in large quantities. These are sugar cane, which grows chiefly in the rainy tropics, and sugar beets, which will grow in most middle-latitude climates.

Sugar beets, however, will not thrive in all middle-latitude climates. They grow best on lowlands where the soil is deep and fertile, the summers moderately cool, and the rainfall moderately heavy.

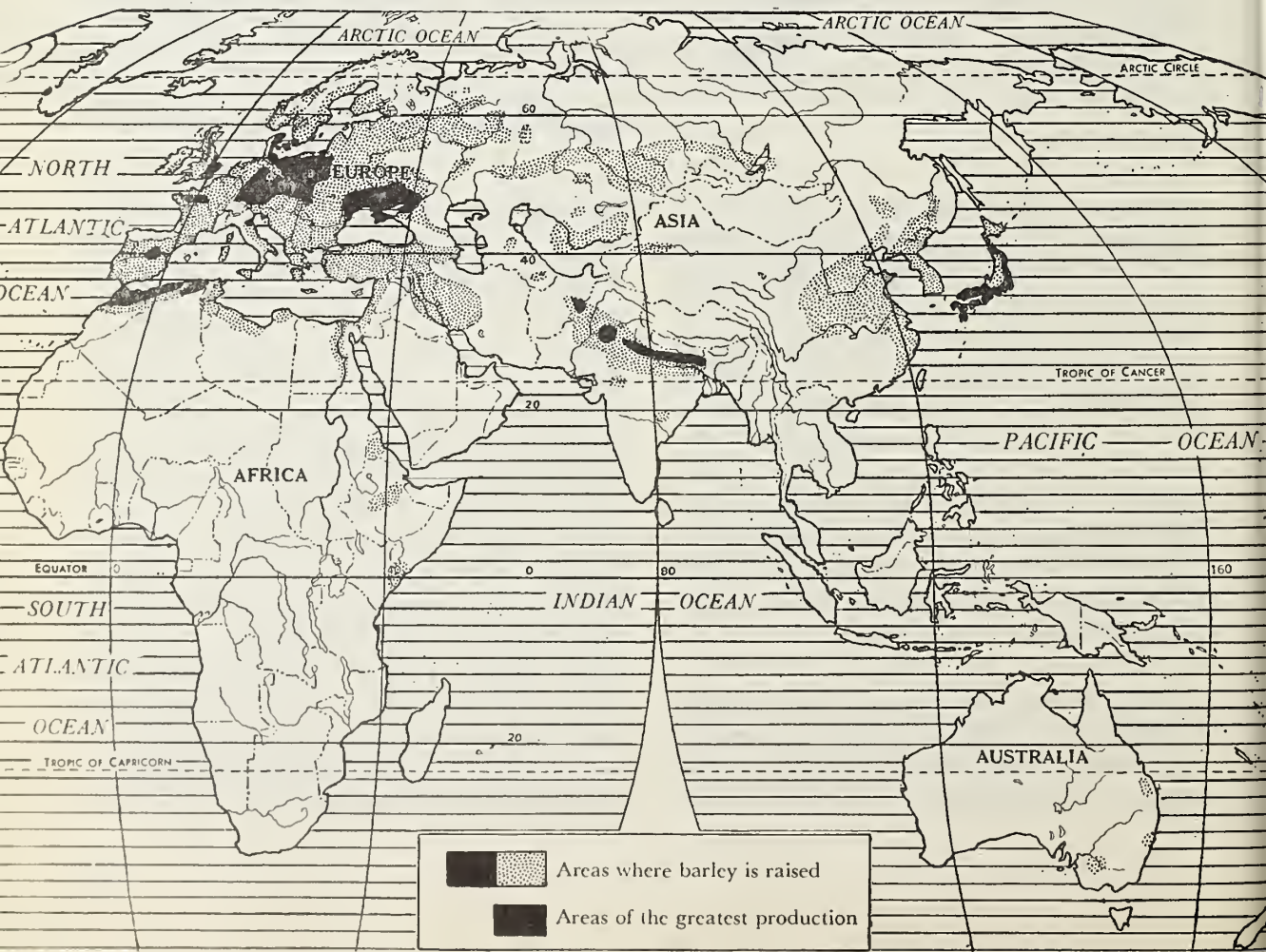
In order to obtain high yields, farmers do not grow sugar beets year after year in the same field. Most farmers grow several different crops, even though their farms are small. From year to year the sugar beets are grown on different plots. Specialists in agri-

culture find out in what order crops should be planted in a certain field to give best results. This practice of planting crops in a regular order is called *crop rotation*. The soil is benefited by crop rotation as well as by the use of fertilizers.

By raising livestock, the farmer who grows sugar beets can make larger profits. After the juice is extracted from the beets at the sugar mill, the solid part that is left is called pulp. Beet pulp is nourishing. Farmers can feed it to livestock instead of buying grain, which is more expensive.

The successful growing of sugar beets calls for many workers. They are needed for thinning, weeding, and cultivating the growing beets. They are also needed for cutting the tops off the beets when they are harvested. This is one reason why sugar beets are grown in densely populated regions.

A map showing where barley is grown in lands overseas.





*Courtesy French Press and Information Service*

The raising and harvesting of sugar beets requires a great many workers. Some of the sugar-beet workers of France are shown in this picture. The piles of sugar beets are ready to go to the refinery.

## POPULATION AND WHEAT PRODUCTION

Almost everywhere in the world people eat bread made from grain or eat grain in some other form. Most people seem to like wheat better than other grains. Wheat is grown in every region that has a suitable environment.

Now you will need an outline map that shows Europe, Asia, Africa, and Australia. You may use a map of the world or trace the outline map on page 376 of this book. Turn to the wheat map on page 76. On your outline map, color the areas that have the

heaviest production of wheat. From the population map, outline the parts of these continents that have more than 125 people to the square mile. In doing this, use a color that is clearly different from the color you used for wheat.

In how many places do you find large areas of heavy wheat production in regions that have more than 125 people to the square mile? If you wish, you may try to think of reasons why other areas of dense population produce little wheat, or no wheat at all. Save your map and watch for more reasons as you study the rest of this book.

## FISHING IN INDUSTRIAL EUROPE

Long before trading or manufacturing became important, most of the people in industrial western Europe were either farmers or fishermen. How long ago some became fishermen, no one knows. We do know, however, that for centuries the French, the Dutch, the English, and the Scotch have caught fish in the Atlantic Ocean, the North Sea, and other good fishing grounds near by.

**Fishing banks.** The ocean and the seas bordering western Europe have had many fish. In fact, the North Sea has been one of the world's greatest fishing grounds. As the map on pages 58–59 shows, the North Sea borders Great Britain, the Netherlands, and Belgium, and it is easily reached from France.

Why is the North Sea good for fishing? Turn to the physical-political map and notice



the depth of the water. Once upon a time the bottom of this sea was a part of the continent of Europe. Slowly this part of the continent sank. Finally the water which we now call the North Sea covered the land. In most places the water in the North Sea is only about a hundred feet deep, and in some places it is less than fifty feet. The shallow areas, which are called *banks*, are the best fishing grounds. In such places the sunlight reaches the sea bottom, and some kinds of plant life grow there. Where the sun's rays do not reach the bottom, there is no plant life. Banks, then, are feeding grounds for fish, especially for cod, halibut, and mackerel.

The Dogger Bank in the North Sea has long been one of the world's famous fishing grounds. For centuries its shallow waters have been visited by fishing boats from all the countries of western and northern Europe. Turn to the physical-political map and locate this famous fishing ground. How large is the North Sea? Use the scale of miles to make your estimate. About how far is the centre of the Dogger Bank from land? Why is this an advantage?

The Dogger Bank reminds us of the Grand Banks in the Atlantic Ocean off the coast of Newfoundland. These fishing grounds are just as rich as those in the North Sea. Hardy fishermen from Newfoundland, Nova Scotia,

and New Brunswick share in the large harvests from these banks.

**Fishing communities.** Some fishermen are usually found among any people who live beside the sea, but in some places fishing is much more important than in others. In western Europe there are a few localities where so many people make a living by fishing that we may call them fishing communities. Such communities are found in Brittany in France, in the coastal lands of the Netherlands, in eastern Scotland, and in southern England.

On the physical-political map find the peninsula of Brittany in northwestern France. Notice that the coast line has many small inlets, and that it is fringed with small islands. There is a reason for this irregular coast line. Ages ago, Brittany was higher than it is now. Then slowly the land sank lower. The ocean flowed into the lower ends of the valleys, and they became small bays or inlets. Valleys into which the ocean has flowed are called *drowned valleys*. As the land sank still lower, the ocean surrounded some of the hills and left only their tops standing as small islands above the water.

What relation is there between such an irregular, island-fringed coast and fishing? As you know, small bays or inlets afford protection against strong winds and waves. Fishermen need sheltered places. Here they have piers or wharves where they unload their catch. Here also they repair and fit out their boats for each voyage.

There are many quaint fishing villages along the coast of industrial western Europe even today. Their old and sturdy stone houses crowd close to the edges of small inlets. In many cases the property and the fishing methods have been handed down from father to son. Changes have been made slowly. The small, stout boats that unload their car-

A fishing community on an English coast.



goes at the piers look like those used long ago, though probably engines have been added. The catch is cared for quickly—cleaned and salted, smoked, or iced. Only a little is kept in the village. Most of the fish are sold in larger markets. When the boats are in, the old fishermen sit in the sun while they mend their nets and talk over the problems of their day.

Small shops sell the few supplies needed by the fishermen and their families. Lanterns, waterproof coats and hats, ropes and nets, compasses and spyglasses are displayed in small windows. Most of the villagers have grown up near the sea, and naturally the sea is the chief interest of the people in these small fishing communities.

Fishing is also carried on as a large-scale industry. Men or companies invest thousands of dollars in large boats, piers, warehouses, refrigerators, and modern fishing devices. Such equipment you can see at the fishing docks of many large ports. There is a big demand for fish, and many people are able to make their living by working in this occupation. Fish are plentiful in most years, and the price is usually low compared with meat. The poorer people of many countries depend to a large extent upon fish because it is cheap and nourishing. Thus many fishermen in industrial Western Europe are able to make their living in this difficult and adventurous work.

Perhaps you have discovered that all fishing communities are alike in the following ways. In the first place, they are located on irregular coast lines with many harbors where boats may be safe from storms. In the second

place, the fishing communities are within easy reach of good fishing grounds.

**Fishing and seamanship.** Like all fishing peoples, the French, Dutch, and British became sea traders also. Fishing gave excellent training in seamanship. Men who sailed to the fishing banks and returned safely must have felt that they could make a sea voyage almost anywhere. In early days many fishermen from the British Isles, Brittany, and the Netherlands sailed to fishing grounds near Iceland that were rich in codfish. Hardy seamen were experienced in crossing the Atlantic before North America was colonized. Thus there is some relationship between fishing and the sea trade of peoples of western Europe.

There is, for example, a very close relationship between fishing and Dutch sea trade. In early days there was an even greater demand for fish than there is today. Farms did not raise many animals for meat. One great drawback to marketing fish was that people had no ice, and fresh fish will not keep very long. As a result, cured, or dried, fish was an important article of trade. Long ago the Dutch discovered the best methods of preparing herring for distant markets. For many years they took cured herring to countries of Europe and brought back other supplies. This helped them become a trading people.

### CAN YOU EXPLAIN THIS?

When North Sea fishermen pull in their nets, they sometimes find parts of very old tree stumps tangled in them. Why does this happen? You should be able to explain from something you read on page 82.

## INDUSTRIAL EUROPE AND WORLD TRADE

A busy industrial region. One of the world's most densely populated regions. A region of many farmers and fishermen. Yes, a region of millions of workers doing almost every kind of work you can name! All these things are true of western Europe. Partly

because of these activities, its favorable location, and other natural conditions, industrial western Europe became a centre of world trade. No other area of equal size in the whole world had such a big trade. No wonder that the total *merchant marine* of western



Europe was nearly one-half of the merchant marine of the world. The merchant marine of a country means all the commercial ships that fly the flag of that country.

**Why has the trade of western Europe been so great?** Perhaps you can answer this question by asking yourself some other questions. Since industrial western Europe is so crowded, with many people living in big cities, where do people obtain food? Since there are so many factories, where do they get raw materials? Since the factories have turned out more goods than even the crowded lands of western Europe can use, where will they sell their products? These are the very questions that the people of western Europe keep asking themselves.

Regions that have too much of one product may trade or exchange with other regions for what is needed. Our country, for example, brings in many foods that we cannot grow. It brings in minerals that we do not mine. It brings in cotton that we cannot grow in our climate. It brings in other raw materials that we do not produce. To help pay for all these things, we ship foods, raw materials, and manufactured goods to other lands. Goods that are brought into a country are called imports. Goods that are shipped out are called exports.

The factories of industrial western Europe produce more goods than are needed for the home market. The surplus is shipped to markets all over the world. The ships return with imports of foods, raw materials, and some types of manufactured goods. When imports of these essential goods are shut off for even a few months, the people of industrial western Europe suffer. If in times of peace their factories cannot sell the surplus, millions of workers are thrown out of employment. The people of this region are dependent upon markets in all parts of the world.

**How the natural environment helps trade.** No place in industrial western Europe is more than a few hundred miles from the

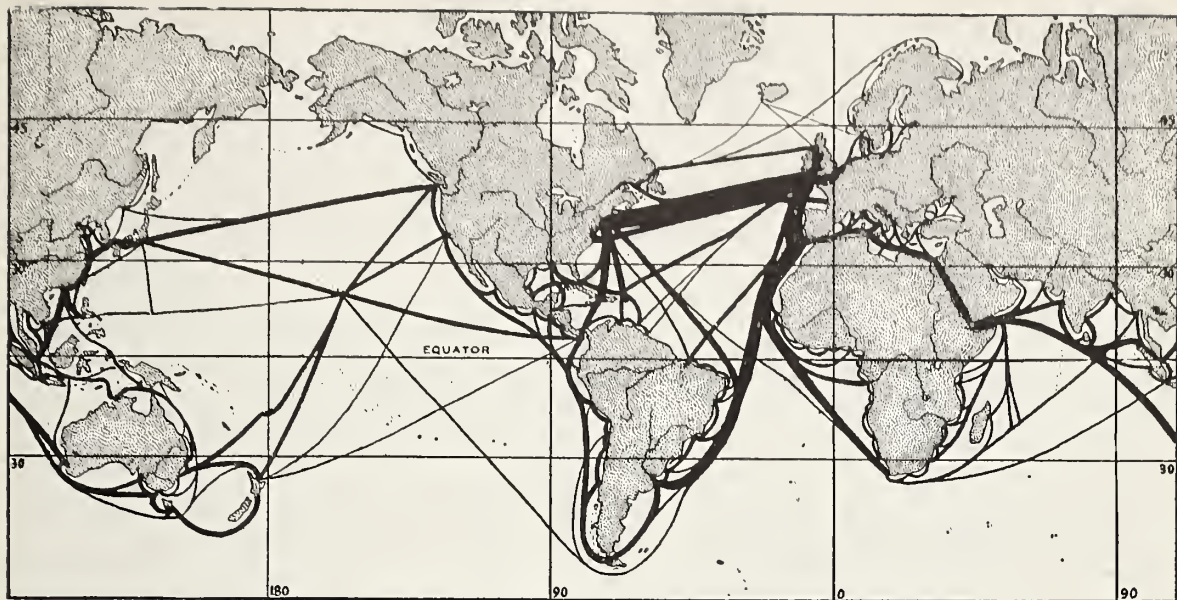
seashore. Look at the map and choose some industrial city near the centre of France. Measure the distance to the coast. Turn to the map on pages 20-21 and measure the distance from a large manufacturing city near the centre of Southern Ontario to the coast. Compare the distances. Manufacturers and business men in any part of industrial western Europe have only a short haul to a seaport. This reduces the cost of transportation on both raw materials that are imported and finished products that are exported.

Rivers have also helped trade by reducing the transportation costs in western Europe. Most of the rivers in this part of Europe flow through plains and are wide and deep enough for river boats to travel far inland. To this system of natural waterways, the enterprising people have added canals to join the rivers. Thus it is possible to ship goods by boat across western Europe from the North Sea to the Mediterranean Sea. Boats can also travel through rivers and connecting canals from the North Sea to many of the manufacturing centres in central Europe. Have we in Canada done anything to help boats to reach places far from the sea?

The coast line of western Europe has helped that part of the continent to become a centre of world trade. You already know that the lower ends of the river valleys were drowned by the sinking of the land. In this way estuaries and bays were formed. On these inlets some of the greatest seaports of western Europe stand today. London, for example, is located on the estuary of the Thames River. Find three other ports which are on estuaries. How far apart are they? Does this help to explain why many of the trade routes shown on the map on page 85 meet in this area?

## Seaports in Western Europe

In any list of the world's greatest seaports, one would be sure to find London, Liverpool, Rotterdam, Amsterdam, and Antwerp, all located in industrial western Europe. Let us now consider some of the reasons for the importance of these great ports.



Ocean trade routes connecting other parts of the world with industrial western Europe.

**The port of London.** London has long been the heart of a great empire. But today London means much more. It means one densely populated area of more than eight million people. Not only is it the centre of British government, but it has been a centre of world trade as well. Why did London grow just where it stands? What natural advantages helped it to grow?

A long time ago, when there were few roads in the British Isles, goods were usually carried on the backs of horses or in carts. It was difficult to build bridges across rivers. In fact, rivers were usually crossed at *fords*. A ford is a shallow place where horses and people can wade across a stream. When the Romans invaded England, they found it easy to ford the Thames River where London now stands. Later they built a bridge, and a village grew up near by. That village was the beginning of London.

The map on page 86 shows that London is on the Thames, about fifty miles from its mouth. No bridge could be built across the lower Thames because the stream is too wide and the land on both sides is too low and marshy. Therefore, the only way to cross the

Thames River near its mouth was by boat. One had to go upstream to London in order to find a place where the river could be bridged. Gradually roads from all parts of England met at the bridge, and goods and people going north or south crossed the Thames at London. Notice on the map on page 86 that many roads meet at London. The Thames River is now crossed by numerous bridges.

The wide mouth or estuary of the Thames River gave London a great advantage for trade. The estuary is deep enough for ocean ships to go as far as London. But beyond the Tower Bridge the Thames can be used only for small river boats. Thus you could say that London grew at the head of ocean navigation. Such a location helps a city to grow, because many workers are needed to load and unload cargo.

There is still another way in which the location of London has helped it to become a great seaport. The estuary of the Thames River opens into the North Sea. London, then, is within easy reach of such great trading countries as Norway, Denmark, Germany, the Netherlands, and France. Use the scale



of miles on the map on pages 58–59 and measure the distance from London to Rotterdam and from London to Le Havre.

Most boats do not sail right into the heart of the city of London. Instead, they stop below the Tower Bridge. Farther down the river, docks and wharves line the Thames mile after mile from London to the sea. The river would be overcrowded were it not for many artificial basins called docks, which are connected with the river by locks. Each will accommodate several ships. Warehouses line the edges of these docks. There cargoes are loaded and unloaded with modern machinery. The newer and larger docks are those which are downstream from London. On the map on this page you can see where the docks at Tilbury are, on the north bank of the Thames. Much of British import and export shipping passes through the port of London.

The importance of London does not depend entirely upon trade. Thousands of the people who live there are engaged in manufacturing. All factories of London do not specialize in making the same thing. Instead, among them they manufacture many different products.

**Liverpool and its harbor.** Next to London, Liverpool is the most important British seaport. It is located on the western coast of England. You can see on page 72 the estuary of the Mersey, which was improved for use as a harbor. Docks have been built for seven miles along the east bank of the estuary,

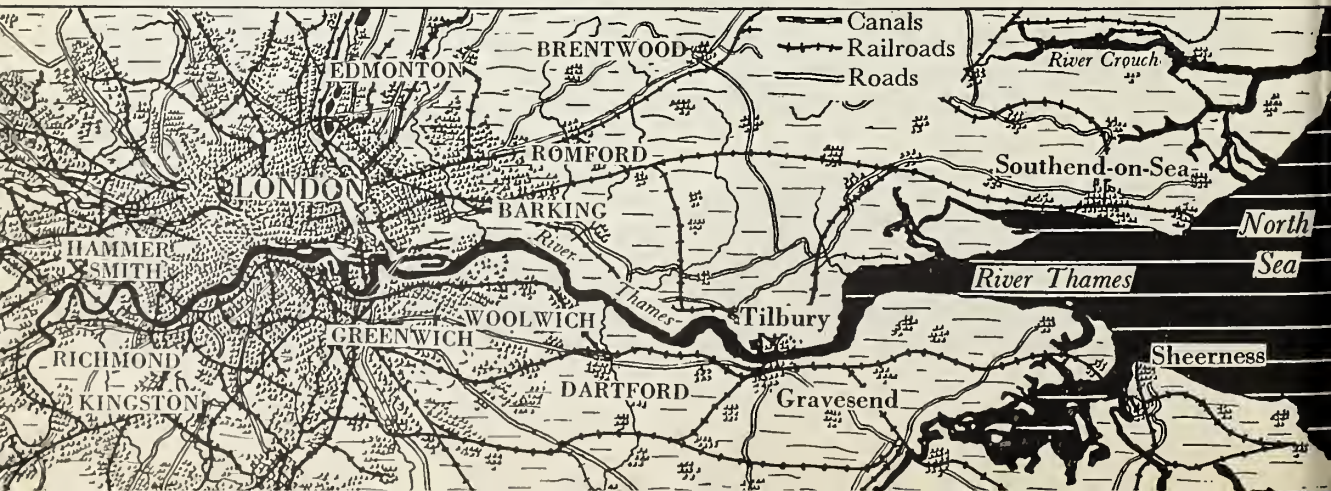
but large ships cannot enter the docks at all times. This is because the water in the harbor is often too shallow for them. They do not have to wait long, however, for the water to become deeper. The rising and falling of the water in the ocean are known as the *tides*. When the water is high or deep in the harbor, it is said to be at high tide. When the water is low or shallow, it is said to be at low tide. Twice every twenty-four hours the water reaches its highest and lowest depths.

At Liverpool, the tides cause the depth of water to change about twenty feet. Big ships coming into the Mersey at high tide would rest on the bottom of the river at low tide if it were not for the gates that hold the water in the docks. These gates are somewhat like the gates of locks in canals in our country.

There are other improvements besides the docks, for the harbor of Liverpool handles much cargo from countries all over the world. Goods of all kinds can be handled rapidly and safely. They can be stored before they are reshipped to other parts of England or to other countries. Cold-storage warehouses and special warehouses for tobacco, wool, cotton, and grain are near the docks. Railroads tie this important port to all parts of Great Britain. However, it particularly serves the big cotton-manufacturing district around Manchester and the famous iron- and steel-manufacturing centre of Birmingham.

**Rotterdam, a great Dutch seaport.** In the small country of the Netherlands is located

A map showing the location of London on the Thames River.





Philip Gendreau

Roads from all parts of England meet at the Tower Bridge. Ocean ships can sail that far up the Thames River. The central part of the bridge between the towers can be raised to let river boats pass through.

Rotterdam, one of the great seaports of the world. Your map will help you to see some reasons for the importance of Rotterdam. In the first place, it is located on the North Sea. A country with a coast line on the North Sea has somewhat the same advantages as does a store on the main street of a city. In the second place, Rotterdam is a gateway to the Rhine Valley. This is very important, because the Rhine Valley has all the natural conditions for a great manufacturing region. The river forms a natural highway for trade leading from the North Sea into the heart of Europe.

Because of its location at the mouth of the Rhine, Rotterdam carries on a large *transit trade*. It handles more than its own products. It carries the products of other countries as well. Vast quantities of goods which were shipped to Germany and other countries in central Europe were unloaded at Rotterdam. Ships also came to Rotterdam to take on

cargoes of goods that came down the Rhine Valley for export. Here large quantities of goods, especially English and German goods, were transferred.

A large part of Rotterdam's trade comes from tropical islands that were formerly Dutch colonies, chiefly islands near south-eastern Asia. From these far-off tropical isles, ships bring coconuts, palm nuts, and other seeds that contain oil used for making soap, candles, and a substitute for butter. Other ships bring cacao beans, used for making cocoa and chocolate. Still others bring rubber. Thus we can see how islands once owned by the Dutch have contributed to the trade of Rotterdam.

**Amsterdam, a city of canals.** Although Amsterdam is not so great a seaport as Rotterdam, it is the largest city in the Netherlands. It started as a fishing village on an inlet of the Zuider Zee. The Zuider Zee was a broad,





Fritz Henle

**Deep canals make Amsterdam a seaport. Heavy freight is being loaded on barges.**

shallow bay surrounded by low, sandy land. Canals were dug to drain this land. Some of these canals have served as streets. There you would see freight being moved on long, flat-bottomed barges. Some of the canals are bordered by trees, others by streets or houses. They are spanned by many bridges. Although not all the streets are canals, there are enough to make Amsterdam seem different from our cities.

Amsterdam is not directly on the sea. When seagoing vessels became larger, the Zuider Zee was too shallow for them. Amsterdam then built a deep canal to connect its old harbor directly with the North Sea. This harbor was deepened and closed off from the Zuider Zee, and Amsterdam was able to continue as a modern seaport. Many of its imports come from tropical islands. You will find sugar, tobacco, cacao, and rubber important items on the list. What products are made from each? What islands supply them?

Amsterdam has long been famous for diamond cutting and polishing. You may wonder why this industry is carried on in Amsterdam. During the Middle Ages, when the Dutch controlled a large part of the trade with the Far East, ships brought jewels to the Netherlands. Here they were cut and polished in little Dutch shops. From that day to this, many workers in Amsterdam have been engaged in cutting and polishing diamonds to be shipped to all parts of the world.

**Antwerp, a great Belgian seaport.** On the map, pages 58–59, find the city of Antwerp. This city is situated on the Scheldt River, about fifty miles from its mouth. The river has been deepened by dredging, and Antwerp can now be reached by large ocean vessels. Canals connect Antwerp with the Seine, the Meuse, and the Rhine rivers. So this seaport, like Rotterdam, serves as a gateway to the Rhine Valley, and to all of Germany and Switzerland.

The growth of Antwerp was due in part to its favorable location near the mouth of the Rhine. Antwerp shared with Rotterdam the huge business connected with the handling of exports from Germany and other trading countries of central Europe.

## IMPORTS AND EXPORTS

Sort the following products into two lists. In one list place products that you know are imported into industrial western Europe. In the other list place products that you know are exported. You will need to remember some of the things you learned about manufacturing, farming, and fishing in this area.

- leather
- meat
- machines for factories
- coconuts
- metal tools
- wheat
- coffee
- salt fish
- cacao
- raw woollen and cotton fibres
- pottery
- sugar

# NATIONS OF WESTERN EUROPE

Industrial western Europe occupies only about one-tenth of the continent. Yet, as you have learned, it includes all of several countries, almost all of France, and a part of Germany. Most of these countries have their own languages. The people living in one country may not be able to understand the language of a near-by country.

**Why so many countries?** The natural environment helps to explain why there are many countries in western Europe. In the first place, bodies of water separate the people. The British Isles, for example, are sharply set off from the mainland of Europe. So it was easy for the British people to form a separate country and to have a language of their own. In the second place, mountains separate the people. The Alps, for example, separate France from Italy, and the Pyrenees shut out the people of Spain.

Now look at the map on pages 58–59 again and find countries that are not separated from their neighbors by bodies of water or mountains. You can see that Belgium and Luxembourg are not cut off from their neighbors by natural barriers. Neither is the Netherlands. This suggests that there are other reasons why western Europe is divided into so many countries. These reasons take us back to early times. Centuries ago, various tribes or groups of people came into western Europe, each group with its own language and its own ways of living. The groups differed in their habits, laws, customs, and religions. They often quarrelled with one another. Quarrels tend to separate people. So finally the different groups set up different governments. They established boundary lines to separate themselves from neighboring groups and countries.

The activities of any group, its ways of living, and all the things that make up its civilization take place in an area which ends at its boundary. Beyond the boundary there

are other groups of people who have different governments and who may have different ways of living. On a political map, then, you can tell exactly where one nation ends and another begins. A nation's coast line is also a part of its boundary, and usually a very important part.

**How the countries are alike.** All the nations of industrial western Europe are alike in some ways. They all face the Atlantic or the seas that open into it. All except Luxembourg have a coast line with good harbors. All have a share of a very densely populated industrial region. All engage in foreign trade. And almost all have colonies or possessions in various parts of the world.

**How the countries differ.** In industrial western Europe, as you have learned, there are differences in the natural environment. There are also differences in the size of the countries. Luxembourg, the smallest, has an area of only about 1000 square miles. It must depend on neighbors for many supplies and for an outlet to the ocean. Larger countries with longer seacoasts and ice-free harbors have advantages in commerce. They are more likely to have a variety of natural resources. Because of this, the people may have a choice of many different occupations.

There are also differences in language. The people of England and Scotland and most of the people of Ireland and Wales speak English. In France, French is spoken. Dutch, the language of the Netherlands, is similar to German. But the people of Belgium speak two different languages. In the southern part, near France, French is spoken. In the north, the people use a language much like the Dutch spoken in the Netherlands. The people of Luxembourg are also influenced by their neighbors. Some speak the language used in northern Belgium, others speak French, and still others speak German.





Philip Gendreau

Mountains sometimes separate peoples. This French town is near the boundary of Italy and Switzerland.

The people of these countries find it an advantage to speak more than one language. In most places tourists from Canada can find workers who speak English. They learned this language at school and from foreign visitors.

What are the two chief languages spoken by Canadians? Travelling across Canada is more enjoyable if you speak both languages.

Governments also have differed. Most of the countries of industrial western Europe

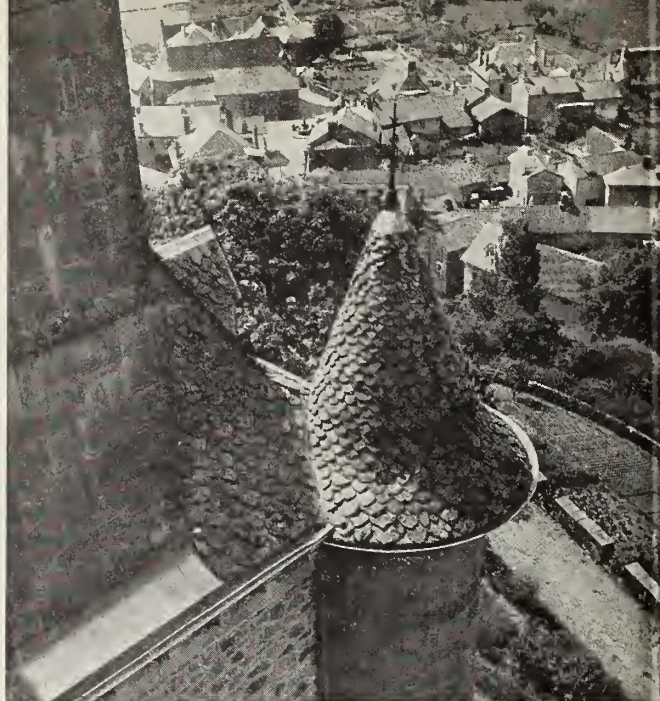


Photo by G. D. Hacket

From a very old castle is seen the cluster of buildings of a farming village in central France.

have governments similar to our own. We speak of them as *democracies*. The people have been free to make and enforce their own laws. The way in which these governments developed is one of the stories your history tells.

There are other small but interesting differences in styles of buildings, in trains and cars, in money, in food, and in recreation. These differences from country to country make travelling on the continent delightful.

## LIVING IN THE BRITISH ISLES

The British Isles contain many islands, but there are only two *political divisions*. A political division is an area of land that is all under one government. All of the islands of Great Britain, together with Northern Ireland, make up one political division called the United Kingdom. The full name for it is the United Kingdom of Great Britain and Northern Ireland. The rest of the island is an independent country, which is called by the present constitution, Ireland. To avoid

confusing it with the island, people often refer to the country as the Irish Republic.

### The United Kingdom

The United Kingdom began several hundred years ago with a union of England and Wales under the same king. Wales was never a very strong country because of its small size, and because so much of it is rough and mountainous. Later, Scotland united with

England, and all the people of Great Britain lived under the same king. Ireland, too, finally joined the United Kingdom, but the Irish people always wanted to govern themselves. Finally all of Ireland except the northern part was allowed to set up a separate government. Northern Ireland remained a part of the United Kingdom.

**A small but powerful nation.** As you can see in the reference tables in the back of your book, the United Kingdom is less than one quarter the size of Ontario, yet it has over eleven times the population of Ontario. A comparison of the figures given in the tables will show that in Ontario there are only eleven people to each square mile, while in the United Kingdom there are 536.

Although the United Kingdom is small in area, its people once ruled an empire that included more than one-fourth of the land in the world. In time most of the larger colonies became self-governing countries called Dominions. The Dominions and the United Kingdom make up the Commonwealth of Nations. It will be interesting to learn how the people of a country as small as the United Kingdom came to occupy so prominent a place in world affairs.

**A location favorable for defence.** The British Isles are near the mainland of Europe and yet they are separated from it. The Strait of Dover and the English Channel are only narrow strips of water. On a clear day one may stand at Dover and see the coast of Europe. Because these waterways are narrow, the British were able to keep in touch with the people on the continent. At the same time, the water helped to protect them from invasion. Thus the British were able to progress with the rest of Europe, but they were in less danger of invasion than were the countries on the continent.

To be sure, the airplane has made the British people less safe in their island home. Yet, in spite of the development of the airplane, the sea remains an effective barrier

between the British Isles and the continent of Europe. But it is doubtful that they would be safe in the event of any future war.

**A location favorable for world trade.** An island location encourages people to use ships and to engage in sea trade. This is especially true when all parts of the island are near the sea, and when the natural resources are not sufficient to support the population. In the British Isles, no spot is more than seventy miles from the sea, and both food and raw materials must be imported.

As the map shows, many inlets extend from the sea deep into the land, and many islands fringe the coast. This means good harbors. It means havens where ships may anchor and be safe from ocean storms. If you wish a name for this kind of coast, you may call it a *sunken or drowned coast*.

The United Kingdom has other advantages. The Atlantic Ocean brings it within easy reach of all the commercial countries in the Americas. The North Sea brings it near the most progressive commercial countries in Europe. These advantages helped England to become a great commercial country.

**Rich in natural resources.** In so small an area as the British Isles, one might expect to find few natural resources. Such is not the case. Of course, no great area of land is devoted to crops, but well-distributed rains make the grass green and good for grazing. In some places, where the land is level and the soil fertile, scientific methods have been applied to farming and have made it possible to produce big yields.

While the farm lands of the United Kingdom are not extensive, the mineral wealth is great. In coal production the United Kingdom ranks high among the great producers of the world. Rich deposits near the sea help to explain why ships have carried great quantities of coal from the United Kingdom to other countries.

As the factories of England grew, ships went longer distances for raw materials.



Many going to distant lands took loads of coal to sell to other countries. The coal was carried at a low cost, because a ship must have a load. This is necessary to keep the lower part of the ship far enough below the surface so that it will move through the water. Without a load it would be tossed up and down by the waves. Some ships are built so that salt water may be stored to weight the ship. Others take on loads of sand or rock which they dump when they reach the place where a cargo is to be loaded.

When a ship carries a load of worthless material, such as rock or salt water, it is said to be travelling in *ballast*. Coal took the place of ballast. It was deposited at ports along the ocean routes. There it could be bought by ships of any country. When ships go long distances from their home port, they must refuel. Ports at which coal can be bought for refueling are known as *coaling stations*. Because British ships went all over the world for raw materials, British coal was available at most ports.

The United Kingdom also ranks high in the production of iron. In some places, as

you know, iron and coal are found close together, an ideal setup for the steel industry.

The many different kinds and large supplies of natural resources found in the British Isles help to explain why the country has grown great in manufacturing, great in sea trade, and great in sea power.

## An Island with Two Countries

Nature has made one Ireland. Man has divided it. Long ago the Celts lived in the British Isles. Then other peoples of northern Europe invaded the islands. The Angles, the Saxons, and other invaders defeated and scattered the ancient Celts. Some fled into the hills of Scotland and Wales, but many sought refuge in Ireland. The people who were in Ireland before that time were also Celts. This will help you to understand why the Irish are mainly Celtic and different from the English.

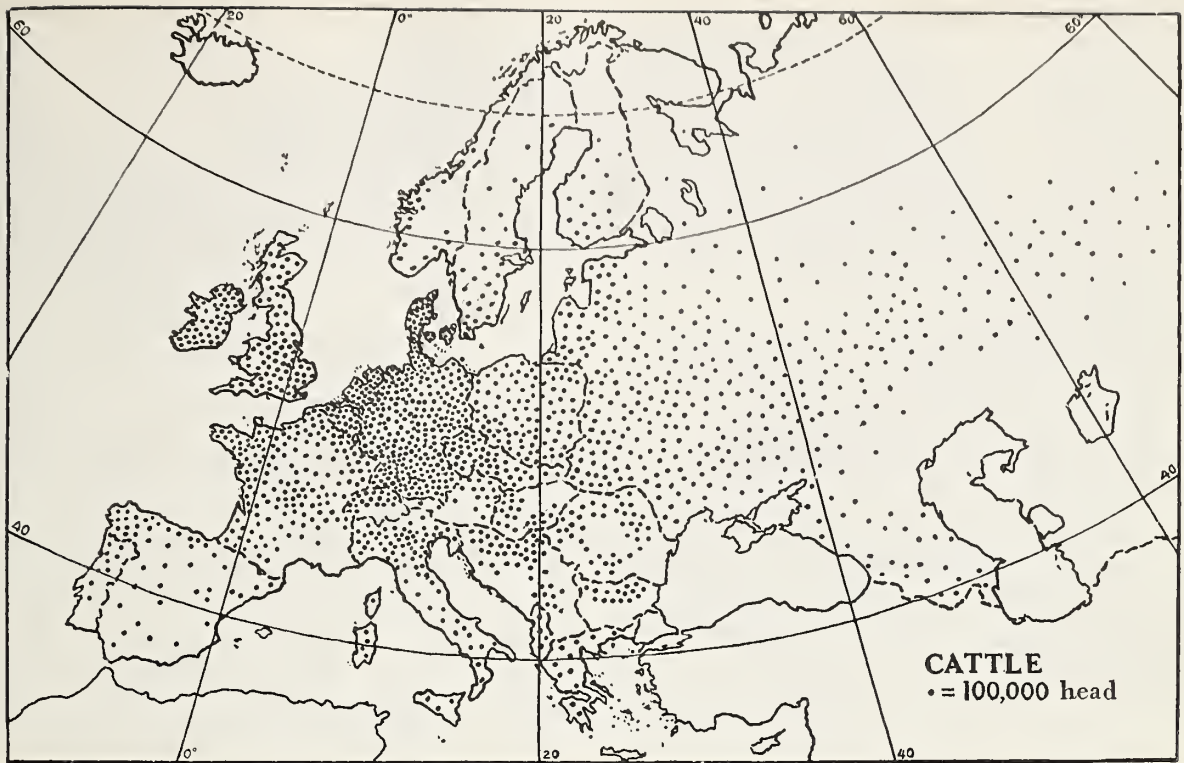
Ireland remained independent for a long time. But at last after a long struggle it was conquered by the British, and the island was united with Great Britain. Some English and Scottish people moved into Ireland, and many of them settled in the part of the island nearest to Scotland. The Irish fought a long struggle for independence, and in 1922 most of Ireland became the Irish Free State, a self-governing dominion within the British Commonwealth of Nations. It had gained as much right to govern itself as Canada had. But six counties in the north-east remained united with Britain and did not become part of the Irish Free State.

A few years ago the Irish Free State left the Commonwealth. It is now a completely independent republic called Ireland. Though the island is only a little larger than New Brunswick, it is today ruled by two governments.

Roads all over England are good. Some, like the modern highway below, have special lanes for bicycles and pedestrians.

*Courtesy British Information Services*





A map showing where cattle are raised in Europe.

**The Irish countryside.** The island of Ireland is smaller than that of Great Britain. It is only a little larger than Scotland and has fewer people. Turn to the map on pages 18–19 and notice how sparsely settled Ireland is compared to England.

The physical-political map will help you learn about the altitude of Ireland. Across the island from east to west stretches a plain bordered by a few low hills. The lowlands are dotted here and there with lakes. A great ice sheet once covered Ireland, and when it melted it left an uneven surface. Water filled the lower places and formed lakes. The famous Lakes of Killarney, in the beautiful, rugged region of southwestern Ireland, were formed in this way.

The ice sheet also left many low, swampy areas called bogs. Sometimes these bogs are filled with decayed vegetation, which forms a spongy material called *peat*. People cut the peat into blocks, dig it out of the bogs, and use it for fuel. It is much cheaper than coal,

and in many Irish homes it provides the only fuel. It is fortunate that Ireland has large supplies of peat, because the island has no important coal deposits.

Everyone knows that Ireland is called the “Emerald Isle.” Songs and stories speak of it as the “Green Isle.” Why these names? A cool, damp climate is the very best for grass. In misty, rainy Ireland the grass is bright green, perhaps greener than anywhere else in the world. It is green throughout the year, for even the winters are not too cold for grass to grow and remain green.

**Irish farms.** The rural folk in Ireland far outnumber those living in cities. In other words, Ireland is chiefly a land of farmers. Small, white stone houses with thatched or sod roofs dot the landscape. What do the farmers raise on their land? Their crops are chiefly potatoes, oats, and barley. As you have learned, Ireland is too cool and wet for wheat, but just right for oats and barley.



The moist and marshy pastures of the Irish lowlands are excellent for cattle. The map on page 93 will help you to see that many Irish farmers keep large herds of cattle. The farmers take milk to creameries, where the cream is separated and made into butter. The skim milk is then taken back to the farms and fed to hogs. In this way the farmers make use of all the milk.

Irish bacon has long been famous for its fine quality. The hogs are raised chiefly on skim milk, oats, and barley. As a result of such feeding, bacon from Ireland is leaner than the bacon in America, where hogs are fattened chiefly on corn. This makes Irish bacon prized by many people. Most of the bacon and butter is shipped to the great manufacturing cities of England. Chickens are kept on nearly every Irish farm, and many eggs are shipped to England.

**Irish seaports.** Belfast in Northern Ireland is an important shipbuilding centre. This port, situated on a wide, deep, and sheltered harbor, is a sea gateway to all of Northern Ireland. Most of its other industries are connected with shipbuilding. Belfast has factories that make steel ropes or cables and steel masts, and mills that make sailcloth for the ships that still use sails.

Turn to the map and find Dublin (Baile Atha Cliath). Dublin, the capital of Ireland, is a busy seaport, partly because it lies across the Irish Sea opposite the densely populated English cotton-manufacturing district around Manchester. The millions of people who live and work in the Manchester district need all the butter and cheese and bacon that can be produced on the plains of Ireland. Every day trucks bring these products to Dublin for shipment across the sea to England.

## LIVING IN FRANCE

In the study of western Europe, you have already learned a great many things about France. You know that it is important for both agriculture and industry. This suggests that France has natural advantages favorable for farming, manufacturing, and trading. It also suggests that the French people are active and industrious. Let us study more closely the country of France and learn more about the French people.

**Sea and land boundaries.** If you do not remember how France is located, look once more at the map. Northward, it faces the English Channel and the Strait of Dover, waterways which link the Atlantic and the North Sea. Westward, it looks across the Atlantic to America. Southward, it looks out over the Mediterranean, which links it with Africa and Asia. This location, so fortunate from a commercial point of view, helped France to become one of the great trading countries of the world.

**Lands and climate varied.** The physical-political map shows that France has several kinds of land. One vast plain extends from the Pyrenees Mountains in the south to the Belgian boundary in the north.

Look at the map on page 60 and find the Great Lowland Plain. The physical-political map shows that in some places the Central Plateau has an altitude of more than 5000 feet. It consists chiefly of old, hard rocks that were lifted up from the sea ages ago. Here and there are the remains of volcanoes that have long been inactive. In ancient days they poured out lava, cinders, and ashes. These volcanic rocks have given some parts of the plateau a fertile soil, thus making it useful for crops and pastures.

The Ardennes Plateau extends from Belgium into northeastern France, and the Vosges Mountains, with their forested slopes, help to separate France from the Rhine Valley. In northwestern France you will find the uplands of Brittany. These rugged lands are



*Courtesy French Press and Information Service*

**This picture shows a typical small French farm. No doubt the farmer who owns it is very proud of it. The buildings and equipment look old and worn, probably from use by many generations of the same family.**

used in many ways. Trees are suitable for steep slopes, and they furnish a variety of products. Apple orchards add to the beauty of the highlands of northwestern France. The apples are made into cider. In the Central Plateau, chestnut and oak trees are raised for nuts. The chestnuts are ground into flour, and the acorns are fed to pigs. The forests of the Vosges supply lumber and fuel. Many of the steep mountain slopes are terraced for grapes or are used for pasturing herds of sheep and goats.

Across the Rhone Valley from the Central Plateau are the French Alps. Here you will find the highest mountains in France and some of the most beautiful scenery in all Europe. The mountain tops are covered with snow the year round. Glaciers extend down steep slopes toward lower, wider valleys. These lower valleys are used in many different ways, for this is one of the most popular tourist centres in Europe. Great hotels, shops

filled with souvenirs, broad paved highways, and railroads are a result of this profitable tourist business.

Although the greater part of France is as far north of the equator as the province of Ontario, its winters are seldom as cold or its summers as hot. Winds from the Atlantic moderate the winters and the summers in western France, and so the western coastal lands have a marine climate. Great extremes of heat and cold are unknown in most of the lowlands. The summers are warm, but not hot enough to make the people uncomfortable as they work in fields or factories. Because the winters are mild, many people get along with only small supplies of fuel for warming their homes. This is especially fortunate because France has only very small deposits of coal.

The central and eastern parts of France, on the other hand, have a continental climate. The summers are warm and the winters



are cold, because the ocean is too far away to affect the temperature. These parts of France have a climate somewhat like that of the Ottawa River district. Of course, a few spots in France are colder because of their high altitude. In the Alps, for example, some of the highest peaks are covered with ice and snow throughout the year.

A third kind of climate is found on the coastal lands in southeastern France. Here the summers are hot and dry, and the winters are mild and rainy. You will learn more about the characteristics of this Mediterranean climate in a later unit.

**Distribution of rainfall.** The arrangement of mountains and plains helps to explain why the rainfall is well distributed over France. You may wonder what mountains and plains have to do with rainfall. When winds from the ocean are forced to rise to cross high mountains, they are cooled enough to form clouds. Both clouds and rain are heavier on the side against which the wind blows. If there were high mountains along the west coast of France, most of the rain would fall there, and little would fall on land east of the mountains. Since there are no high mountains along the west coast, the winds scatter their moisture over a wide stretch of lowland. The map on pages 12-13

**Rivers make it easy for goods to be sent from one part of France to another. The barges below are being towed to Paris.**

shows that the rainfall in most parts is from 20 to 40 inches a year. This rainfall is most favorable for farming. Using the same map, note how the high mountains of British Columbia influence the rainfall in Western Canada.

**How geography favored unity.** The surface of France helped to bring about unity among the people. Mountains and coast lines gave most of the country natural boundaries. It was easy to build canals, highways, and railroads on the low, level land. The people of France had no great difficulty in going from one part of their country to another. They grew to know one another, and they learned from one another. At an early time they began to share the same language and the same ideals and customs. The great differences in the people began to disappear. They were no longer many groups. They were one group. Paris became a centre of the routes that led from one section of the country to another. See if you can trace some of the important routes on the maps.

**A nation of many farmers.** Agriculture is the chief occupation of French people. Many of those who do not actually work on farms handle or distribute the products raised by farmers. There must be workers to grind the flour, to make the sugar, to prepare the meat, and to do all the many other things that are necessary. Most of the land of France is devoted to crops and to meadows. The farms are small, averaging about twenty acres. The average farm of Canada is more than eight times as large.

Most of the farmers of France own the land on which they work. The land is handed down from father to son, and the farms may remain in the same families for many generations. The French farmers love their land. One reason for this is because it is their

*F. S. Lincoln*



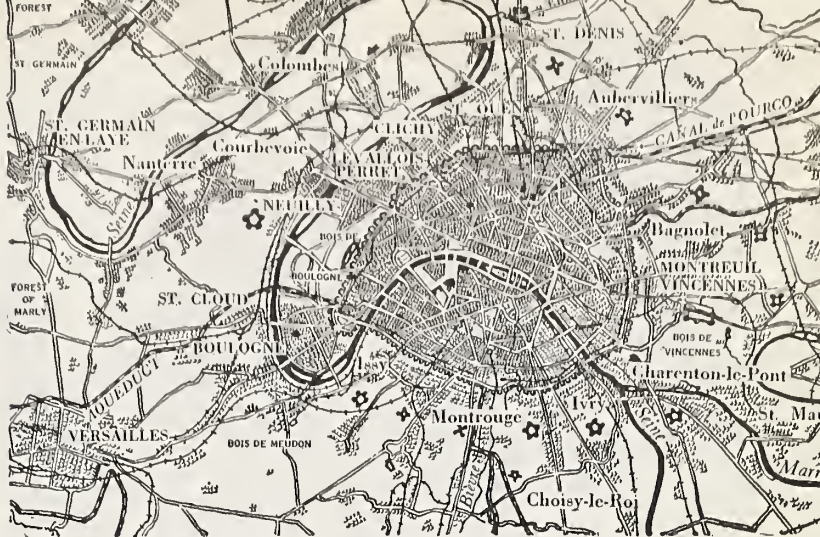
own. Year after year the family toils to enrich the soil and to grow better and better crops.

France has a great variety of farm products because it has a variety of lands and climates. Sugar beets and flax are suited to the cool plains of the north. Wheat thrives on the rich soil of the Paris Basin. Oats and rye do well in the cool, wet highlands of the Central Plateau. The summers in the Garonne Valley of western France are long enough and hot enough for corn to ripen. Grapes grow on the sunny slopes of river valleys. Dairy cows are raised on farms where grass grows well. The dry, chalky lands of the Champagne region are excellent for grazing sheep. Both sheep and goats can live on the scanty vegetation of the Central Plateau.

Visitors never get correct ideas of France by seeing only Paris or other large cities. To understand France and the French people, visitors should become acquainted with the country people as well as with the people who live in the big cities.

**French industries.** France has small supplies of coal. Look at the map on page 62 to see where these deposits are. It has some rich deposits in the northern part, which it shares with Belgium. It has smaller coal fields in the Central Plateau region and in the Saar territory. France has large supplies of iron. The Lorraine iron field is one of the richest in the world. Other iron deposits are scattered through the Central Plateau and through Normandy in north-central France.

It is easy to understand that coal is important to many of the industries of France. The chief industrial sections are near the Belgian and Ruhr coal fields. In these areas you will find heavy manufacturing. Several manufacturing cities are located near small coal fields in the Central Plateau. Le Creusot manufactures guns, steel rails, and many other heavy iron and steel products. The



A map showing the location of Paris on the Seine River.

factories in these urban areas manufacture, not only iron and steel, but a variety of other products. Clermont-Ferrand manufactures large quantities of rubber goods.

In thinking about manufacturing in France, one should always keep in mind that the French are an artistic and a skilful people. They are especially skilful in making glassware, porcelain, furniture, and textiles. Many of the fabrics they weave bring good prices because they have such pleasing colors and beautiful designs. Some of the articles they make have such high quality and skilled workmanship that everyone has come to associate them with France. One of these products is gloves.

**A famous European capital.** In the heart of a fertile farming country, near the junction of the Seine and Marne rivers, is the city of Paris. The ancient inhabitants of France started Paris at this place, where an island in the Seine made it easy to cross the river. Then, too, early settlements on the island were protected from enemies. This island is the centre of Paris today. The picture on page 98 shows one of the most famous and interesting buildings on the island, the cathedral of Notre Dame.

Paris lies on the easiest land route from the Mediterranean Sea to the English Channel. This route leads from the seacoast up the





*Roger Coster from Rapho-Guillumette*

**Notre Dame, which stands on the island in the centre of Paris, is a famous cathedral built in the thirteenth century.**

Rhône-Saône Valley to the city of Dijon. From here a low pass leads to the Seine Valley and the route continues down that valley to the English Channel. If you will trace this route on the map, you can see that it passes through Paris.

Paris is surrounded by small farms and gardens. Most of the food used in London has to be imported, but Paris has only to reach out to the near-by countryside for most of the food it needs. Then, too, Paris is a centre for trade and transportation. Railroads extend from the city in every direction. They not only lead to all parts of France but connect with the railroads of every country of Europe as well. Canals join the Seine with the Loire, the Saône, and the Rhine. So it has come about that all parts of France are joined to Paris by land and by water. Many slow-moving barges and swift-moving trains arrive and leave every day. Moreover, Paris is an important centre for airplane travel. Air lines lead to most parts of Europe, Africa, and the Americas.

The location of Paris as a centre of trade and transportation helps to explain why it has also become the greatest manufacturing

centre in France. Its factories make a great variety of products: machinery, automobiles, furniture, chinaware, jewellery, soap, and gloves. For a long time the chief industry in Paris, however, has been designing and making of clothing. So skilful and so artistic are the French in designing hats and gowns for women, that buyers from all parts of the world go there to study the latest styles in clothing. As a result, Paris has become a famous fashion centre. It sets the style for clothes that are worn in many countries besides France.

**The French possessions.** In early days France sent explorers to Asia, Africa, and North and South America. She took special pride in establishing colonies in Acadia and New France. Though Britain later captured these settlements, the French colonists remained. Today millions of Canadians are descended from these French settlers.

As a result of all these early French explorations and settlements, French possessions became more widely scattered over the world than those of any other country except England. In South America, the French established a small colony called French Guiana. In Africa, they gained control of vast stretches of land, particularly in North Africa. In Asia, they gained control of Indochina and many islands in the Pacific and Indian oceans.

The areas are no longer called colonies, but they are still associated with France. The French carry on a large trade with French lands scattered over the earth. Trade is heavy in coffee, sugar, and rubber. From the products, would you say that these outlying parts of France are in low or middle latitudes? Check your answer with the map on pages 10-11. Most of the areas have "French" as part of their names. Indochina has already been mentioned as French.

# BELGIUM AND THE NETHERLANDS

You already know that a large part of industrial western Europe is a low plain. Some land, of course, is lower than other land. The lowest land of all is found in the Netherlands and in Belgium. The very name Netherlands gives you a clue as to what kind of country it is. *Nether* means "low." The countries in this area, which includes the coastal regions of Belgium, were once called the Low Countries. The physical-political map shows that parts of these two countries are really below sea level. As long as the land is lower than the sea, you may wonder why the water does not rush in to cover the fields and the cities. The answer lies in work, in planning, and in patience.

**The need for farm land.** Hundreds of years ago the lowlands were deserted stretches of wastes and marshes. Then fishermen discovered that there were good fishing grounds along the shores of the inlets. They started settlements. They wanted land to give them food other than fish. They decided to drain the swamps and marshes.

A dike, or dam, was built around the area to be drained, so that the waters of the sea were blocked off. The water from the area was pumped into a canal by means of windmills, such as those shown on page 100. With the land dry and protected from the sea, it could be fertilized. Later it was used for growing crops and for pastures.

More and more land has been taken in this way from the sea. These new lands are called *polders*. Excess water from the polders is pumped into the canals. In dry seasons water is pumped back onto the land from the canals. You read on page 88 that canals are used as streets in Amsterdam. You can see, then, that the canals are used in three different ways: for drainage, for irrigation, and for travelling.

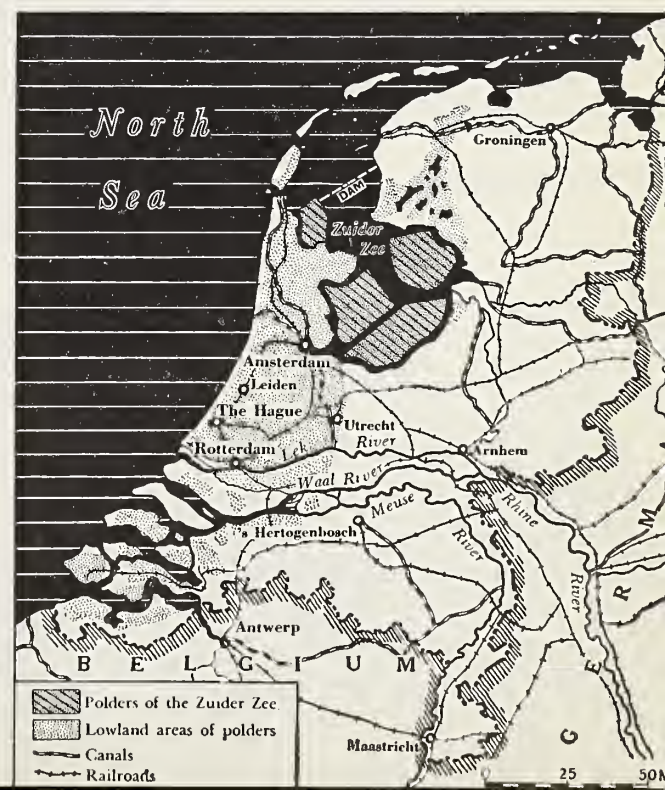
Recently the Dutch have cut off an arm of the sea with a huge dam. You can see by the shaded area on the map where the Zuider

Zee, which means South Sea, was. The map below shows the long dam and the first polders made from the Zuider Zee. All the shaded areas were once under water. When the work is finished, there will be no water left except in canals.

This victory of the Dutch over the sea reminds Canadians of the dikes built by the Acadians over three hundred years ago. They drained the marshes around the Bay of Fundy as they had done back home along the west coast of France. This work was continued by English settlers who followed the Acadians. Since 1900 the dikes have become broken, and the waters of the Bay of Fundy have flowed in over the land. Today Canadians are repairing and improving the dikes, for they protect over a thousand square miles of the richest land in the Maritime Provinces.

**Crowded countries.** Both the Netherlands and Belgium are very small countries. Turn to the Reference Tables in the back of this book and compare the sizes and populations of these two countries with those of France.

A map showing polders formed from the Zuider Zee.





You can see that it would take eight pairs of countries like the Netherlands and Belgium to cover France.

Yet, in these small countries we find the densest population in all Europe. If all the people were distributed evenly over the land, there would be about 650 people on each square mile in the Netherlands. Belgium is even more crowded. There would be at least 700 people on each square mile.

**How the people use the sea.** The map shows that the Netherlands has a longer shore line than Belgium. Both border the North Sea, but Belgium extends along the sea for only forty miles. Both countries, however, are helped greatly by the sea, from which they derive much of their wealth. The sea carries away their exports and brings in their imports. Chiefly because of sea connections with the outside world, both countries have acquired colonies in distant lands. The sea also influences the climate of the

Netherlands and Belgium. Both countries have a marine climate. Fogs are common, and people visiting these countries usually find the weather damp and cloudy. The Netherlands has even more fogs and dampness than Belgium, because, with its long shore line, it is more exposed to the influence of the sea.

The Dutch have long been very active traders. There are reasons for this. In the first place, the Netherlands borders on the North Sea, the waters of which are travelled more than those of any other sea in the world. In the second place, the Netherlands serves as a sea gateway to the busy Rhine Valley. As you have already read, the Dutch people carry on an enormous transit trade. In other words, they handle goods that are shipped to and from Germany and other countries in central Europe.

Sea trade and a seafaring life encourage men to explore and settle distant lands. Like the other great trading countries of western

**Picturesque old windmills pump the water into collecting canals to make new land in the Netherlands.**

*Courtesy Netherlands Information Bureau*



Europe, the Netherlands built up a great colonial empire. The largest colonies were tropical islands southeast of Asia. The Dutch people got sugar, coffee, tea, rubber, and cacao through trade with these colonies. The islands also have huge deposits of oil. These island colonies were called the Netherlands Indies. They are now the country of Indonesia, but the Dutch people still buy their products. Tropical products and oil have given the Netherlands raw materials for many industries. The Netherlands has a small colony in South America and a few small islands in the Caribbean Sea.

Belgium, like the Netherlands, has colonies overseas. Its most important colony is the Belgian Congo in Central Africa, which you can find on the map on page 30. This large colony lies in the low latitudes, and from it Belgium obtains many valuable tropical products. The Belgian Congo is also rich in mineral deposits. It has some deposits of uranium, a very valuable mineral. It also mines large quantities of copper, lead, and zinc. Once more we can see that European countries need and use the various products from their colonies.

**Using the land.** People of the Low Countries are not engaged in trade alone. In these countries today millions of people farm, and millions carry on manufacturing.

You have learned something about farming in crowded countries. There men work hard to get much food from little land. They plant crops giving big yields, and they use various methods to increase the produce of their few acres. This intensive farming makes it possible for the owners of these tiny farms to feed millions of people in cities.

The lowlands of Belgium and the Netherlands provide excellent pastures for dairy cows. The Netherlands especially is widely known for dairying. The cows are kept in



*Courtesy Netherlands Information Bureau*

The polders, which would be seven feet under water if the land were not drained, make fine pasture for cattle.

warm, clean barns. Usually the farmer's home and barn are joined. The cows are given excellent care. Dutch farmers use large quantities of milk for making cheese, and the Netherlands exports much of it.

Vast quantities of flowers such as tulips, hyacinths, and crocuses are raised, chiefly for bulbs. One of the most famous flower-bulb centres is Haarlem, a city you can find on the map on pages 58-59, north of Rotterdam. These bulbs are grown in small fields and are cultivated and harvested by hand. When the flowers are in bloom, the fields form a carpet of brilliant colors. What other things have you read about the Netherlands that help to make this country famous for its colorful scenery?

Belgian farmers carry on about the same kinds of work as their neighboring Dutch farmers. In Belgium, the farms are so tiny that in our country we might speak of them as gardens. Most of them are cultivated by their owners, and the whole family helps with the farm work. Men, women, and children work from morning to night to get the most out of the soil. If you have any farmers from Belgium living near you, you may have noticed how long and hard they work.

**Manufacturing in the Low Countries.** In spite of the importance of trading and farming in the Low Countries, more people make a living by manufacturing than in any other way. As you have learned, these countries are in the great manufacturing belt of western



Europe. However, they differ in the sources of power and in the supplies of raw materials for factories.

The Netherlands has only small supplies of coal and no important metals. As a result, many of the factories depend upon the products of the farms and upon imported tropical goods for their supplies of raw materials. Some coal is mined in the southern part near the Belgian frontier, and coal is brought in from Germany and England. Another source of power in the Netherlands is windmills. With their long, revolving arms, they gather enough power from the wind to operate a few simple machines.

Cheese factories, flour mills, and meat-packing plants supply work for many people. Then, too, the Dutch are famous for their chocolate and cocoa. Cacao beans, from which these products are made, come from tropical countries. Sugar refineries use beet sugar from beets grown on Dutch farms and imported cane sugar. Textile mills use flax from near-by fields and cotton imported from the United States. As you might expect, some Dutch factories make fertilizers. Farmers use large quantities of fertilizers to carry on intensive farming.

Belgium has rich deposits of coal, iron, and other metals. These raw materials help to make it one of the great manufacturing nations of Europe. There are many iron and steel mills in the valley of the Meuse River in Belgium. Then, too, the Belgians have long

been famous for weaving cloth. Flanders was famous for woollens, linens, and silks long before coal and iron came into use. Today rayon is another valuable product of Belgian textile mills.

Belgian women have long been famous for their fine lace, most of which is made by hand in the home. Handmade Belgian lace brings good prices because it is so beautiful and so well made. In a country as crowded as Belgium, manufacturing, as well as farming, tends to be intensive. In other words, the people use small supplies of raw materials on which they spend a great deal of time, work, and skill.

**Cities of the Low Countries.** You have learned about three great seaports in the Low Countries—Rotterdam and Amsterdam in the Netherlands and Antwerp in Belgium.

Brussels (Bruxelles) is Belgium's largest city. The map shows that it has a good location on a low plain. The map also shows that Brussels is a very important railroad centre, and that it is Belgium's capital city. Besides being the capital, it is a busy manufacturing and trading centre.

The Hague is the seat of government of the Netherlands. It is best known as the home of the International Court of Justice. This is an important body of fifteen judges elected by the United Nations. It helps to keep peace and justice in the world. Have you noticed any news reports from the Hague?

## LUXEMBOURG, A MINIATURE COUNTRY

Luxembourg is a small country, one of the smallest independent countries in the world. You could easily drive across it in an hour's time. A pleasant drive it would be, too. The forested highlands of the north are furrowed by pleasant little valleys. These uplands are really a continuation of the Ardennes Plateau. The southern part is lower, and there you would see vineyards and small patches of

grain and potatoes. There you would also see iron mines, for a part of the rich Lorraine iron field lies within the boundaries of this small country.

Most of the little rivers of Luxembourg empty into the Moselle, which, in turn, empties into the Rhine. So, you see, the Moselle River provides an easy route to the industrial section of Germany. Most of the trade,

however, is carried on with Belgium and the Netherlands, because of a trade agreement among the three countries.

Although much iron ore is exported, Luxembourg has iron foundries and steel mills

of its own. Many of the people work in mines and in factories, but outside of the cities are small farms which would remind you of Belgium. Does the map suggest any problems which Luxembourg may have?

## THE RHINE RIVER VALLEY

The areas just described are political divisions. They are independent countries with governments, laws, and customs of their own. The Rhine Valley extends from Switzerland to the North Sea, and its mines, foundries, factories, and mills are all closely related to the industrial life of western Europe. This will be easier to understand if you look at the map on pages 58–59. You have already traced the Rhine from its source to its mouth. You know that it begins in Switzerland and empties into the North Sea. Let us now look at it more closely.

### Five Sections of the Rhine Valley

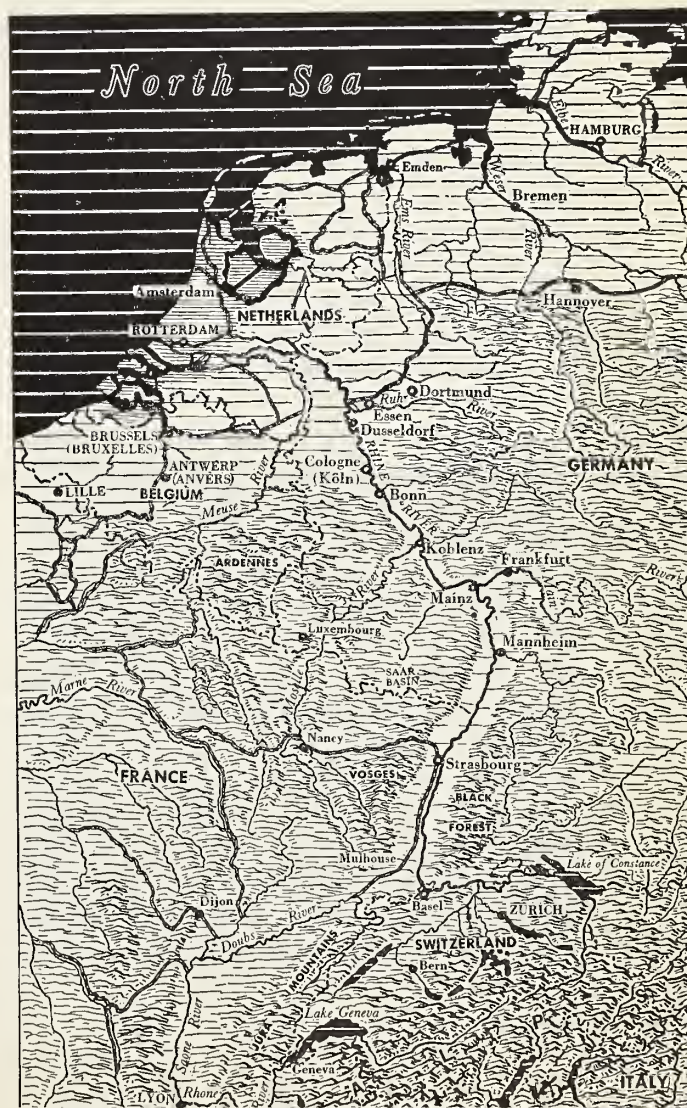
The land bordering the Rhine changes appearance as the river flows from the mountains to the sea. Read carefully. Study the maps and pictures and try to imagine how each part of the valley looks.

The Rhine River rises in the mountains of central Switzerland. There it flows swiftly between high mountain walls, gathering the waters of tributary rivers as it rushes along. Some of the tributaries have falls where they join the valley of the Rhine. At one place the Rhine River itself has beautiful falls. There you would see hydroelectric power plants. On the south-facing sides of the valley are vineyards, and higher up are pastures and hayfields. Health resorts and great hotels also are located on the high, sunny slopes. The floor of the valley was widened ages ago. We usually think of mountain valleys as being V-shaped. But this part of the Rhine Valley is wide enough to be used for roads, railroads, villages, and even a few small fields. What

large lake lies in this part of the valley? This section of the Rhine Valley ends at Basel, which is at the head of navigation. Do you see why this city is important to both Switzerland and Germany?

The next section begins at Basel. In some places the valley is twenty miles wide. Farm lands border the river. Large cities, beautiful

A map showing the extent of the Rhine River Valley.







© Screen Traveler from Gendreau

Where the Rhine Valley is narrow, beautiful old castles perch high on the banks, vineyards grow on terraced slopes, while villages border the important river thoroughfare.

highways, railroads, and canals make use of the level land in the valley. Far back from the river you would be able to see the bordering highlands—the Black Forest on the east and the Vosges Mountains on the west. Many boats loaded with fuel and raw materials bound for Switzerland may be seen on this section of the river.

Northward from Mainz the river flows through a narrow gorge. In most places the high, steep sides of the valley are near the banks of the river. Vineyards grow on terraces of the steep slopes. Here and there along the banks, or overlooking the river, are old castles to remind us that the Rhine has been an important thoroughfare for a long time. Wherever a tributary valley opens into the Rhine Valley, the little pocket of level land is used for a village or small city. These places are the best sites for villages along the Rhine. They have the advantage of level land and easy routes that lead to the bordering countryside. These villages can use the Rhine for transportation. A few towns have

bridges. How do bridges help a town grow? Koblenz is the largest of the cities along this section of the river. Here the Moselle empties into the Rhine. The valley of the Moselle is the route to Lorraine. For what is that region noted? What cities about which you have studied may send cargoes on the Rhine barges? This section of the Rhine Valley ends a few miles south of Cologne (Köln) at the town of Bonn.

From Bonn to the sea, the Rhine winds through a low plain. It is not easy to recognize natural features of the land in this part of the valley. Docks, warehouses, factories, and means of transportation of all kinds hide the land. The Ruhr Valley opens into this densely populated section. Before World War II the Ruhr was described as the busiest spot in Germany. This section of the valley still has the natural advantages for a great manufacturing area. Name all the advantages about which you have studied.

When the Rhine reaches the lowlands of the Netherlands, it flows through a *delta*.

Deltas are lands made of material deposited by rivers near their mouths. Villages and farms line the river. Rotterdam is the port near the mouth. River boats leaving Rotterdam carry a variety of bulky materials which are suitable for the cheap, slow transportation on the river. You will recall that this port has what is known as a transit trade. The Rhine is connected with many other waterways by canals. You can see this for yourself if you look at the map carefully. Boats move more slowly on canals than on rivers. Why is transportation slower by canal than by river? Try to find out what particular use some of these canals may have. Now see if you can point to each of the five sections of the Rhine Valley on a wall map and describe it briefly.

## COUNTRIES OF INDUSTRIAL WESTERN EUROPE

Which of the countries of industrial western Europe interest you most? Choose one of the countries for special study. The members of

the class should plan together to make sure that at least one pupil is working on each country except Luxembourg, which is too small for special study.

You have just finished reading a short section on each country. You also learned about countries under the subjects manufacturing, farming, fishing, and trading. Use the Index in the back of the book to find the information about your chosen country. Use the product maps and the maps on pages 12-19, as well as the physical-political map and the relief map. Make notes of all you learn. You may read about the country in other books and magazines if you wish.

When you have finished your study, your class will be interested in what you have learned. You may make your report in either of two ways. You may write a short article about it. Prepare your article as if you were writing it for a magazine. If you prefer, you may draw a large map of the country. Put on it symbols to show the location of the important cities. Show where the various products are grown or made. Add any other information that you think is important. You might, for example, wish to show altitude, as on the physical-political map.

# THE GEOGRAPHY WORKSHOP

## I. THE WORLD IN YOUR OWN COMMUNITY

Canada has a number of contacts with industrial western Europe. When you have followed the suggestions given below, you will almost feel that the people of this area are your next-door neighbors. In fact, it may be that some of them are.

### *Things that come from industrial western Europe*

If you have been looking for articles made in industrial western Europe, you probably have a number of such articles in your collection. Make a card for each article. On the card write the name of the country from which it came and the industry it represents. For example, if you have a dish from England, your card should say "England: pottery industry." How many industries are represented in your collection?

Perhaps you can find out how the owners of the articles got them. Did someone buy them in stores in Europe and bring them to your community, or were they bought in Canadian stores? If they were bought in Canadian stores, they were brought to this country by importers. Importers are merchants who buy goods from other countries. Pretend that your class is an importing company. What goods made in industrial western Europe will you import? What, do you think, would the people in your community like to buy from you?

If members of your class have stamp collections, they can undoubtedly bring to class stamps from the countries of industrial western Europe. Perhaps some pupils can bring coins from these countries.

Canada has two official languages. You will find them used side by side on many official forms and in trains, planes, and other places. What are they? Which Western European countries do they come from?



If you are following the suggestions made on page 51, your class is divided into three groups for your community study. Each group can contribute something to your understanding of industrial western Europe.

The group studying the social environment can tell the class what industries are to be found in your community. Does your community have any of the same industries that are carried on in industrial western Europe? If so, perhaps you can visit one of them and find out how the work is done.

This group may be able to tell you how density of population in your province or county compares with density of population in parts of industrial western Europe.

### *What you can learn*

#### *by studying your community*

The group studying the natural environment may compare your own home region with industrial western Europe in respect to altitude, rainfall, length of frost-free season, and natural vegetation. This group may find a European region very much like your own. If it does, the class can make a careful study of this area. How do the two compare in products, density of population, and transportation? From what you have learned, you should be able to give reasons for some of the differences you find.

A great many early settlers came to North America from the part of Europe you have been studying. The group that has been working on community history can tell whether your region was settled by people who came from that area, or, perhaps, by people whose ancestors came from that area.

Over nine-tenths of the people of Canada could be called Europeans; that is, either they or their ancestors came from Europe. Try to find people in your community whose ancestors came from the countries of industrial western Europe. You may be able to find some to represent each country you have studied. Find out what these people know about their ancestors. Perhaps you yourself have ancestors from England, Scotland, Wales, Ireland, France, Belgium, or the Netherlands. It is fun to find out all you can about your ancestors and where they came from.

In which of these countries do the people speak English? Perhaps you can find out some ways in which this differs from the English which you speak. What languages are spoken in the other countries?

### *People you will enjoy knowing*

In your community there are probably people who came from the countries of industrial western Europe. Invite them to come and tell your class about their homelands. Ask them to tell you just how their own communities look, the kinds of plants that grow in the region, the work people do, the buildings, the schools, and the amusements people enjoy. They may be able to sing songs or tell stories they learned when they were children. Ask them to say a few words in the languages of their countries, if they came from countries where English is not spoken.

During the war there were Canadian soldiers in all the countries of industrial western Europe. Perhaps you can find in your community some veterans who will tell you about each of the countries you have studied.

One of your teachers or a member of your class may have been in western Europe. Anyone who has been there will try to answer your questions about it.

Remember that none of your visitors will know every region in a country. Two visitors from the same country may tell you quite different things and describe quite different scenery because they are talking about different regions. If your classroom has a wall map of Europe, ask each speaker to show you the places he is talking about.

## II. CAN YOU SORT THEM?

A printer was making up a page of pictures of industrial western Europe. He found that someone had made a mistake. Some of the photographs had been taken in industrial western Europe, but pictures of the rest of the world were mixed with them. Can you help him sort out the ones that do not belong in industrial western Europe?

1. A freight train loaded with coal
2. A boat coming into port with a heavy load of fish
3. A field of tulips
4. A field of cotton
5. A steel mill
6. A shipyard
7. A huge level wheatfield with a combine at work
8. Dairy cows grazing in a pasture
9. A large corncrib beside a barn
10. A rubber plantation

### III. WHAT YOU CAN READ FROM THIS PICTURE

The picture at the right shows the harbor of a seaport in northern England, about fifty miles north of Liverpool. Talk about the picture in class. Look at it carefully by yourself. Try to read from the picture the answers to the following questions. Describe what you see in the picture that tells you each answer.

1. Some ports have piers extending into the water. Others have basins and channels extending into the land. Which kind is this?

2. Are the wharves in the picture meant for loading and unloading passengers or freight? How do you think goods are brought to the wharves?

3. The port has warehouses for storing many kinds of goods. Can you tell where oil is stored?

4. What is the purpose of the gate across the channel near the front of the picture? You can discover a clue to your answer in the description of Liverpool on page 86.

5. Is there any evidence that the picture was taken in England and not in some other country of industrial western Europe? Is there anything in the picture to prove that it was not taken in America? Think carefully before you answer. Sometimes people try to read more from a picture than is in it.

### IV. WHICH OF THESE ARE RELATED?

The left-hand column below is a list of five things that are important to the people of industrial western Europe. Match these with the features of the natural environment in the right-hand column. You will need to use one of the items twice.

- |  |   |
|--|---|
| 1. many good harbors for trade and fishing | a. irregular coast line                 |
| 2. strong cotton threads                   | b. location on the North Atlantic Ocean |
| 3. good fishing grounds                    | c. moist air from the ocean             |
| 4. good grass for hay and pasture          | d. shallow water near the coasts        |
| 5. easy access to world trade routes       |   |



*Aerofilms from Ewing Galloway*

### V. TRADE OF WESTERN EUROPE

You are to choose the right answers to each of the following questions. Choose very carefully, because more than one answer may be right.

1. Which of the following groups of products are exported from Ireland?

- wheat, corn, rice
- coal, steel, machinery
- butter, cheese, bacon

2. Which of the following groups of products are exported from the United Kingdom of England, Scotland, Wales, and Northern Ireland?

- potatoes, oats, tobacco
- woollen, cotton, and linen textiles
- coal, dishes, machinery

3. Which of the following groups of products are imported into the United Kingdom?

- iron, tin, copper
- wheat, meat, butter
- cotton, linen, wool

4. Which of the following groups of products are exported from one or both of the Low Countries, the Netherlands and Belgium?

- lace, linen, woollen cloth
- wheat, oats, potatoes
- butter, cheese, salt fish

5. Which of the following groups of products are exported from France?

- gloves, fine clothing, dishes
- wheat, sugar, meat
- cotton, coconuts, cacao

6. Which of the following groups of products are exported from the United Kingdom?

- salt fish, machinery, cotton cloth
- wheat, corn, oats
- butter, bacon, eggs



## VI. HAVE YOU LEARNED THESE NEW WORDS?

1. If you should mention rural and urban people, would you be talking about country and city people, coal and iron miners, or the people of the Ruhr Valley?

2. If you used kilns and kaolin in your work, would you be a steelworker, a potter, or a fisherman?

3. If you mentioned estuaries, drowned valleys, and tides, would you be talking about polders, the seashore, or fishing banks?

4. If you frequently had to write business letters that included the terms merchant marine, transit trade, ballast, and coaling stations, might you be a railroad engineer, a shipowner, or a coal dealer?

5. If you were in a business that could be classed as heavy manufacturing, which of the following raw materials would you be most likely to need: sheepskins and goatskins, iron ore, or bales of cotton?

## VII. INDUSTRY AND POPULATION

You will need an outline map of Europe. You may trace the one on page 372.

Now turn to the map on pages 58-59. Using the map key, find the cities of industrial western Europe that have more than 500,000 people. This includes, of course, the cities that have more than 1,000,000. Put these cities on your outline map. If you have any doubt about the size of a city, look it up in the table on page 370. Add the great seaports you have read about.

Color on your map the manufacturing regions you have read about, such as southern Wales and the lower Rhine Valley. Now outline in a bright color the regions with a population of more than 250 to the square mile.

Do you find that most of the large cities are in this very densely populated area? Do you find that most of the manufacturing regions you know about are in this area?

You have discovered for yourself a characteristic of industrial western Europe. A large part of the dense population is made up of city people. Besides the very large cities on your map, there are dozens of cities with more than 50,000 people. As is usually true of city people, most of them work at something that has to do with manufacturing or trade. How does your map suggest this characteristic of cities and city people?

## VIII. GEOGRAPHY ON A GLOBE

If you were to draw a hemisphere map with France at the centre, it would include most of the land in the world. You can prove this for yourself by using a globe. Cut a curve in a piece of cardboard to fit exactly halfway around the globe. With its centre on France, turn it around slowly. It will pass over exactly one hemisphere. What land areas are left outside?

Select a few important cities shown on your globe, one or two on each continent. Measure great-circle distances from Paris to each of these cities. Now measure great-circle distances from your own home to the same cities. How many of the cities are nearer to Paris than to your own home?

What advantage does location at the centre of the land hemisphere give to France? Of course, all of industrial western Europe is so near the centre that it shares the same advantage.

## IX. NEWS FROM

### INDUSTRIAL WESTERN EUROPE

The nations of industrial western Europe are important in the world. You could scarcely look through a single issue of a newspaper without finding news items about them. Many magazine articles are written about them. You can hear people speaking from some of these countries on the radio.

For one week collect information about industrial western Europe from newspapers, magazines, and the radio. Then take time to discuss these news items in class. Talk about how they are related to what you have read in this section of your book.

You may find news about a city, about the trade of one of these countries, about the crops and industries of a country, or about the weather.

You will also find news about people, about elections, and about events of all kinds. These items may not interest you so much. They are not closely related to the geography of the countries. There is one interesting thing to do, however. Look at the names of the people. List all the names you can find of people from each country. Do you see any similarity in the names of people from the same country? After you have studied names for a time, you will be able to recognize the nationality of many people from their names.



# *Living in Scandinavian Europe*

## SUCCESS UNDER DIFFICULTIES

In northwestern Europe there is a group of four countries which we shall call Scandinavian Europe. These countries are Norway, Sweden, Denmark, and Finland. The people of these countries are Norwegians, Swedes, Danes, and Finns. On the map above, you see that most of Scandinavian Europe lies farther north than industrial western Europe. You can imagine that Scandinavians have many problems quite different from those of the people of industrial western Europe.

**Homelands of the Scandinavians.** The Norwegians and the Swedes share a great peninsula lying between the Atlantic Ocean

and the Baltic Sea. This large southward-pointing peninsula is the Scandinavian Peninsula. It is sometimes called Scandinavia. A long, rugged mountain barrier divides Scandinavia into two regions. Part of the surface slopes from the mountains toward the Atlantic. This is occupied by Norway. Another part slopes toward the Baltic. This is occupied by Sweden.

For a long time the countries of the Scandinavian Peninsula were united under one king. But finally the two groups of people on the peninsula, the Norwegians and the Swedes, decided to separate into two nations. They did not fight a war. They did not even



quarrel. In those days of slow travel, it was difficult for the people who were separated by a mountain barrier to live under the same government and to share the same ideas. It was more convenient to have two countries.

Denmark consists of a northward-pointing peninsula, called Jutland, and a group of islands, some little and some big. Many of the people of Denmark live on the islands, which serve as steppingstones from Jutland to Scandinavia. Only narrow strips of water separate them from one another and from either peninsula. It is easy for the Danes, as the people of Denmark are called, to reach the southern tip of Sweden.

Just east of the Scandinavian Peninsula lies Finland. The people of that country are called Finns. Long ago, Finland belonged to Sweden and a great many people moved from Sweden to Finland and mixed with the earlier Finnish settlers. Swedish influence

has helped to make the Finns somewhat like the people of the Scandinavian Peninsula.

About six hundred miles west of northern Scandinavia is an island called Iceland. It was settled by people from Scandinavia, and it resembles Scandinavian Europe in many ways. For hundreds of years the island belonged to Denmark, but now Iceland is completely independent.

**Two areas compared.** Scandinavian Europe is different from industrial western Europe. Most of it is farther north. It has lower temperatures, a shorter growing season, longer summer days, and shorter winter days. It has more rugged land and more forests than industrial western Europe, but it is not so well supplied with minerals.

Although Scandinavian Europe is larger than industrial western Europe, it has only about one-fifth as many people. When you

Here you can see some of the mountain slopes that cover much of the Scandinavian Peninsula. Notice the well-kept fields, the racks of drying hay, and the little group of neat farmhouses.

*James Sawders*



read about Scandinavian Europe, you will see why it has a sparse population. You will wonder how these northern countries support as many people as they do. The story of Scandinavian Europe is a story of success under difficulties. You will learn that the people are prosperous and progressive.

**Study guides.** Answers to the following questions will help you understand Scandinavian Europe. Keep them in mind and look for answers as you read. Maps and pictures, as well as what you read about Scandinavian Europe, will help you.

1. What difficulties caused by the natural environment have the Scandinavians overcome in order to make a good living? (IV)

2. Why is northern Norway called the Land of the Midnight Sun? (III)

3. Why are some parts of Scandinavian Europe better than others for agriculture?

How do crops and methods of agriculture differ from place to place? (III, IV, V)

4. Why do many people in the Scandinavian countries turn to the sea to make a living? (IV)

5. How is lumbering carried on in Sweden, Norway, and Finland? Why is it important in these countries? (V)

6. Certain factories in England and other parts of industrial western Europe use large quantities of Swedish iron. Where is the iron ore mined? Why do other countries want Swedish iron and steel? How is iron ore shipped to other countries? (IV)

7. The Scandinavian Peninsula is said to be as well separated from the rest of Europe as are the British Isles. What does this mean? Do you agree? (IV)

8. What raw materials are used in Scandinavian industries? What raw materials do the Scandinavians export? What is their most important source of power? (II, IV)

9. How has the airplane helped to make Iceland and Svalbard more important? (II)

## WHAT WE CAN READ FROM MAPS

### LOCATING SCANDINAVIAN EUROPE

1. On an outline map of Europe, print the name of each of the following countries: Norway, Sweden, Denmark, Finland, Iceland. Refer to the physical-political map on pages 112–113 to tell to which of the Scandinavian countries the Faeroes belong. Print the name of these islands on your outline map. Now color the part of the map that shows Scandinavian Europe.

2. Turn to the map on pages 10–11. Find the line of 60° north latitude and follow it across Europe. Note that it passes through the southern part of Norway and Sweden. Follow this same parallel across Canada. You see that it passes along the northern edge of our four western provinces. Now follow the Arctic Circle across both the Scandinavian Peninsula and Canada. You will find that the Arctic Ocean touches the northern coasts of both Norway and Canada near 70° north latitude. Therefore you know that the mainlands of both countries extend about the same distance from the equator.

3. What countries in Scandinavian Europe border the Baltic Sea? What gulf helps to

separate Sweden and Finland? What gulf borders Finland on the south?

### THE LAND AND THE PEOPLE

1. The relief map on page 60 shows you that the Scandinavian Highlands cover a large part of the Scandinavian Peninsula. In which of the Scandinavian countries are the highlands nearest the sea? Which is higher, northern or southern Finland? Which has more lowland, Norway or Sweden? Finland or Sweden? Which of the Scandinavian countries has lowland only?

2. The mountains of the Jotun Fjeld are the highest in Scandinavia. Find them on the map. What is the altitude of the highest peak? How does its altitude compare with that of some of the high peaks in our country? Refer to the map on pages 20–21.

3. Refer to the map on pages 18–19 to find where most of the people live in Scandinavian Europe. Compare this map with the physical-political map. Do more people live in the lowlands or in the highlands? Are the Scandinavian Highlands densely or sparsely populated?



## FINDING RIVERS AND LAKES

There are many rivers and lakes in Scandinavian Europe. Many of them are small and cannot be shown on a map of this scale. They are very important to the people, however. In which countries do you find the most lakes? Southern Sweden has one of the largest lakes in Europe. Find it on the map. Lake Vänern is about the same size as Lake Winnipegosis in Manitoba.

Find several lakes in the Scandinavian Highlands. Notice that many rivers have long, narrow lakes near their sources. Rivers that flow from lakes have one important advantage for water power. The lakes act as reservoirs or storage basins which feed the rivers and give them an even flow all year. What other uses for lakes can you think of?

## FOLLOWING THE COAST LINE

Find North Cape on the physical-political map. There, where the coast of Norway reaches its farthest northern point, high gray cliffs extend like a wedge into the sea. Follow the coast line southward. You see that many narrow strips of water extend far back into the mountains. These long, deep inlets are called *fiords*. Notice the projecting ridges of high land between them. Numerous small islands fringe the coast. The coast lines of British Columbia and of Norway are very much alike.

You can see Denmark's coast line in greater detail on the larger-scale map on page 128. As in Norway, many long strips of water extend into Denmark. Denmark turns its back to the North Sea and looks toward the islands to the east. Copenhagen, the capital, is on one of these islands.

## PEOPLE AND CLIMATE

1. Compare the rainfall map on pages 12–13 with the population map on pages 18–19. How much rainfall is there in the more thickly settled parts of Scandinavian Europe? Find an area with heavy rainfall and sparse population. How do you explain the heavy rainfall?

2. Find Scandinavian Europe on the map on pages 14–15. The two things that influence the length of the growing season most are latitude and altitude. How do you explain the short growing season in northern Scandinavia? along the boundary between Norway and Sweden?

Notice the length of the growing season along the Atlantic coast of Norway. A warm current flows north along the coast of Norway and the winds are usually from the west. This helps to explain why northern Norway has a growing season longer than that of northern Sweden.

3. Turn to the map on pages 16–17. Where do you find areas without forests? What parts of Canada have similar regions? Does any vegetation grow in such regions?











*Courtesy Swedish Travel Information Bureau, Inc.*

The photographer was facing north when he took this picture at midnight in northern Sweden.

## LOOKING AT SCANDINAVIAN EUROPE

Scandinavian Europe is located in high latitudes, with its northern part extending beyond the Arctic Circle. A large part of the area has high altitude as well as high latitude. The steeper slopes face the Atlantic Ocean, and the shore line is laced with fiords and inlets. Scandinavian Europe differs from industrial western Europe in many ways.

### Length of Days and Nights

Turn to the map again and notice that the Scandinavian Peninsula extends farther north than any other part of Europe. The northernmost point is North Cape, which you have already located. Travellers from every land go there to see the sun shining at midnight. At North Cape the sun does not set for about two months during the summer. It moves

around the sky each twenty-four hours, and it shines all the time. It can be seen at all hours of the day and night. Winter, on the other hand, is a dreary time of year. For about two months the sun does not rise at all.

**The long summer day.** The Arctic Circle is drawn on maps and globes to tell us something important about the sun. At any place north of the Arctic Circle there is at least one night in summer when the sun does not set at all, and at least one day in winter when it does not rise.

At the Arctic Circle,  $66\frac{1}{2}^{\circ}$  north latitude, summer days are long. On one of three days, June 21, 22, or 23, the sun shines all day and all night. At noon of this long day you would see the sun about halfway up in the southern part of the sky. Twelve hours later, at mid-

night, you would see it low in the north. The sun seems to travel completely around the sky. To picture it correctly, you must remember that it is higher at noon than it is at midnight.

The number of days the sun does not set increases as you go north from the Arctic Circle. Now you understand why places on or north of the Arctic Circle are said to be in a land of midnight sun. At some time during the summer the sun shines at midnight in that part of the world.

As you know, Canada has many more hours of daylight than of darkness in the summer. The farther from the equator a place is, the longer are its summer days. The longest day at all places between the equator and the Arctic Circle comes about June 21. Just how long it is depends on the latitude of the place. If, for example, you live in the most southern part of Ontario, you are about  $42^{\circ}$  north of the equator. Your day on June 21 will be just over fifteen hours long. If you live at Hebron in Labrador, your day will be eighteen hours long.

Most of the people of Scandinavian Europe live in about  $60^{\circ}$  north latitude. There the longest day is eighteen and a half hours long. The sun rises at 2:45 in the early morning and does not set until 9:15 at night. You can see that the night is only five and a half hours long. When days are long, crops have a long time each day to grow and ripen. Men have a long time to work. Is it any wonder that the people of these northern lands like to eat five meals a day?

**The short winter day.** As you know, our winter days are shorter than our winter nights. Our winter days would be still shorter if we were farther north. In other words, the farther north one goes, the shorter are the winter days. On December 21, for example, if you live near Vancouver, British Columbia, your day will be eight hours long. On this date at  $60^{\circ}$  north the day is only five and a half hours long. The sun does not rise until 9:15 and it sets at 2:45 in the afternoon. Winter days are



*Kostich Photo Service*

This is a fiord. You can see how the long arm of the sea reaches deep into the high mountains.

short and gloomy. The noonday sun is low in the southern sky. Mountains may shut out the view of the sun, and long shadows reach across the valleys. In winter there are many cloudy and foggy days and frequent rains and snows. The people rejoice when summer comes. It is easy to see why.

Northward from the Arctic Circle, the period when the sun does not rise grows longer and longer. It lengthens to a week, to a month, to about two months at North Cape, Norway, and Cape Bathurst, Canada. At the North Pole the sun does not rise for six months, September to March.

## Mountains and Coast Line

The mountains of Scandinavia are closely related to the sea. Water surrounded some of the mountains, leaving the peaks as islands. Mountain ridges project outward from the land. We call them capes and peninsulas. Arms of the sea extend into the long narrow valleys between the ridges to form fiords, such as you read about on page 112. The picture at the top of this page shows a fiord winding through the mountains.

**Mountains of high latitudes.** The mountains of Scandinavia are old. They have been worn down by the great ice sheet, by valley glaciers, and by running water. You have



found by studying the map that the highest peaks are only about half as high as Mt. Robson in the Rockies. Still, many tourists who see the mountains of Norway are surprised and delighted. They know the mountains are really quite low. But they seem to tower so high that the people must tilt their heads far back to gaze up at the snow-capped heights. Why do you suppose these mountains seem so high?

The mountains of Norway are usually first seen from the deck of a steamer. The people are at sea level when they look at the mountains. Perhaps they are travelling up a fiord where bare, rocky cliffs rise almost vertically to a height of 1000 feet or more above sea level. Above these steep walls the passengers catch glimpses of dark evergreen forests of pine and spruce and of patches of grass.

Now imagine that you are looking at the mountains near Lake Louise, Alberta. Perhaps the peaks are actually twice as high as those of Norway. But this part of Alberta has a high altitude. You are already far above sea level when you stand at the foot of the mountains. So they seem to be much lower than you would imagine such great heights to be.

Snow covers the peaks of Norway's mountains until midsummer. These are mountains of high latitudes. They are so far from the equator that even the low mountains have freezing temperatures. But, you might say, some mountains near the equator are also snow-capped during summer months. The altitude of these mountains, however, is very high. Only the tops of very high mountains near the equator have freezing temperatures.

**Slopes and transportation.** The crest of the Scandinavian mountains is near the Atlantic coast, and so Norway has steeper slopes and swifter rivers than Sweden. Mountains, rivers, and fiords make travel by land difficult in Norway. For travel north or south, many bridges, tunnels, and sharp curves are needed. This has hindered railroad and road building, but Norway's settlements have been connected by steamship lines. Boats run on

regular schedules up and down the fiords and provide the transportation that is needed.

Sweden, with a larger lowland area, with gentler mountain slopes, and with greater industrial development, has built more land routes. By looking at the physical-political map, you can see that there are more railroads in the southern part. Some extend to the Far North. You will notice that one crosses the Arctic Circle and the mountains to reach the Norwegian port of Narvik. Find this port on your map.

In Sweden, also, waterways are used for transportation. Goods are hauled up and down the long coast line in ships of different sizes. Boats steam across the lakes and up and down some of the rivers. Even shallow rivers may be put to work; on these rivers logs are floated downstream from the forests to the sawmills.

Finland has lowlands in the southern part, where most of the people live. There are only a few railroads, but there are thousands of lakes and many rivers that are navigable or can be used for floating logs. One lake system which is used for transportation consists of more than a hundred large lakes and hundreds of small ones. This provides cheap transportation, but the waterways can be used by boats only in summer. In winter, when the lakes and rivers freeze, the smooth parts are used for roads.

Denmark relies more upon roads and railroads than upon inland waterways. Remember, though, that this country consists of islands as well as a peninsula. Most of these islands are connected with one another and with Jutland by ferryboat service, but some of them are connected by bridges.

**A useful coast line.** In the days of the great ice sheet, tongues of ice moved slowly down the valleys from the mountains of Scandinavia. In many places these valley glaciers pushed all the way to the sea, widening and deepening the valleys through which they moved. Later, when the ice melted, the land sank slightly. The sea flowed into the valleys

and formed fiords. Islands which were once a part of the mountain ranges fringe the coast.

Find three large fiords named on the map. Do not their shape and length suggest that they are deepened river valleys? You can see that they extend back into the land about a hundred miles. These fiords are bordered by mountains, as is the one in the picture on page 115, but not all fiords have mountain walls. Some of them are bordered by rolling land. That is the kind you would see if you went by boat up the fiord that leads to Oslo. Find this fiord and the city of Oslo on your physical-political map.

## LATITUDE AND LENGTH OF DAYS

Many newspapers give the time of sunrise and sunset each day. If a newspaper in your own town gives this information, look up the dates of sunrise and sunset for the shortest and longest days in the year. The newspaper office and perhaps the public library will have the papers. What dates will you ask for?

How long is the shortest day at your home? How much longer is it than the shortest day at Oslo, Norway? How much longer is the longest day at Oslo than at your home? What is the difference in latitude?

Make the same comparisons between your home and the northernmost point of Iceland.

## NATURAL RESOURCES OF SCANDINAVIA

The Scandinavian countries do not have a large variety of natural resources. Much of the land is not suitable for crops, but valuable forests cover a large part of this land. Other large parts are used for pastures. Outside of rich deposits of iron ore in Sweden, there are few mineral resources. Norway, Sweden, and Finland, however, have an abundance of water power, which helps to make up for their lack of coal. The countries of Scandinavian Europe also have the advantage of being located near good fishing grounds, which supply necessary food.

### **The problems of a Norwegian farmer.**

Much of Norway's land is barren and mountainous. The soil is thin and stony, and drenching rains fall along the western coast. Only about one out of every thirty acres can be used for crops or for pastures. The small areas of good land are divided into many farms. They average about nine acres in size, but often a farmer must cover many more than nine acres to tend to his work. That is because farms may be made up of several scattered plots of land, some good for crops and others fit only for pastures. These

## Farm Lands of Scandinavia

There are many farms in Scandinavian Europe, but they are not large. In Norway, small farms are strung along the fiords and up the mountain sides where there are little patches of land not too steep to be cultivated. In Sweden, farms are most numerous in the southern lowlands. They vary in size from five to twenty acres. In Finland, the farms are scattered along the lakes and the coast. In Denmark, the land is low and a larger part of the country is suitable for farming. But Danish farms, too, are small, for the government encourages intensive farming.

**A saeter, as you know, is a pasture in the high mountains. The snow and ice are part of a huge glacier.**

*Courtesy Legation of Iceland*





plots may be in different locations, and the farmer must go wherever his land is. This kind of farming is not so easy as farming on a single large plot of land.

A glance at the map on page 14 will show that the growing season in most parts of Norway is short. The farmer plants oats, rye, barley, and potatoes on the little patches of thin, stony soil. Which of these crops is best suited to thin soils? If you do not remember, turn back to pages 78-79 and read the topic "cool-climate crops" again.

Much of the land in Norway is used for pastures and for growing hay. The farmer must raise food for both his family and his animals. He has only a short, cool summer in which to prepare for a long, cold winter. Sometimes he has trouble drying his hay, because there is so much rain. He hangs the hay on racks, so that the air and the sun can dry it more quickly.

During the short summer, while the farmer is taking care of his crops and hay, the cows, sheep, and goats are driven to the saeters. Saeters are high mountain pastures where the animals can graze. Those who tend to the animals live in lonely little houses made of stone and sod. Some of their time is spent in making cheese, which does not have to be sold right away because it keeps well. At the

end of the summer, the animals are driven back to the farm land. All during the long winter they are sheltered in warm barns and are fed the hay and grain that have been stored for them.

**Farm lands of Sweden.** If you look at the physical-political map, you will find that Sweden has more lowland than Norway. Its highlands are not so rugged, its soils are not so stony. The mountains cause the westerly winds to rise and grow cool. Before reaching Sweden, they lose much of their moisture. Therefore, Sweden does not have so much rain and snow as Norway. Mountains protect Sweden from cool ocean winds, and so its summers are warmer and sunnier than the summers in Norway.

Look at the map again and notice that southern Sweden is farther south than any part of Norway. It is only two or three degrees farther south, but in lands so far north even this little difference in latitude causes longer growing seasons and warmer summers in the places farther south.

These natural conditions make it possible for Sweden to produce much more food than Norway. In Sweden, one out of every ten acres can be used for crops or pastures. Do you remember how much land in Norway

**This is some of the fertile Swedish farm land. Notice the neat well-built farmhouses back among the trees.**

*Courtesy Swedish Travel Information Bureau, Inc.*



can be used for such purposes? If not, turn back to the section on farming in Norway and compare the two figures.

In northern Sweden, just as in northern Norway, only a little farming is carried on. Some barley is raised north of the Arctic Circle. Turn to the map on page 80 to see how far north barley grows. It is possible to grow barley so far north because of the long summer days. The grain ripens more quickly when it has so many hours of sunshine. Farther south the summers are longer, but the days are shorter. In southern Sweden it takes about 115 days for barley to ripen. Near the Arctic Circle, on the other hand, it takes less than 90 days.

Farmers of southern Sweden grow about the same kinds of crops as do their Norwegian neighbors. Oats, barley, rye, and potatoes are important. Some wheat and sugar beets are raised also.

Although the raising of crops is important in some parts of Sweden, dairying is the chief business of the Swedish farmers. Grass grows well in this climate. Much of the land is hilly and rough and cannot be used for planting crops. It is best for hayfields and for pastures. Cattle graze on the eastern slopes of the Scandinavian Highlands and on the cool lowlands along the Baltic Sea. Hogs and chickens are also plentiful. Sweden exports butter, cheese, eggs, and bacon of high quality.

The people use modern tools and machines in their work. Their red and white houses and clean barns are lighted by electricity. Fields are cultivated, and animals are sleek and healthy. The Swedish people are modern and progressive.

**Farming in Denmark.** Denmark has several natural advantages which help to make it a better food-producing region than the rest of Scandinavian Europe. In the first place, Denmark is farther south, and so it has



*Courtesy Danish Information Office*

This neat white farmhouse is on a Danish farm. Notice the short distance over the flat farm land to the next white farmhouse.

a longer growing season than most parts of Scandinavia. In the second place, the land is low and nearly level. In the third place, the rainfall is from 20 to 40 inches a year.

Denmark has some disadvantages, too. For one thing, the soil is poor in most parts of the peninsula. You already know that the bare and almost deserted west coast is covered with dunes. The shifting sands blew inland and covered the soil. The people of Denmark have checked this invasion of the sand by planting trees and other kinds of vegetation. In other parts of Jutland, large swampy areas have been drained and cultivated. Then, too, the climate of Denmark is chilly and damp much of the time. Often it is windy or foggy. It is not hard to understand that such qualities of the climate are not desirable. Though it has some advantages, Denmark is not an ideal farming country.

For a long time Danish farmers managed to produce enough food for their own people. There was never anything left, however, to sell to other people. The farmers raised a little wheat, but the summers were too cool and too damp for wheat to do well. They kept a few farm animals, but only enough to satisfy their own needs.

Gradually they changed their system of agriculture. Farmers found that they could make money by raising cattle and selling dairy products to Great Britain, which was a large market and close at hand. The Danes began to specialize in producing the



foods wanted by Great Britain. Milk was taken to the dairy to be made into butter. Skim milk was returned to the farms and fed to the pigs. Such feeding produced the lean bacon wanted in Great Britain. Some farmers specialized in raising poultry, and fresh eggs were exported in large quantities.

The government encouraged the changes. Wastelands were improved for cultivation. Large farms were divided, and then farming became intensive. More land was used for pastures, and crops such as oats, barley, and hay were grown to provide food for the farm animals. Later, Danish farmers found it was profitable to buy feed in order to have more and better animals. They imported cottonseed meal, corn, and other feeds.

Danish farms are small, and most farmers own the land they cultivate. Young people are encouraged to study agriculture in the schools. Scientific methods have been used to enrich the soil. Clay and lime are spread on the poor, sandy soils. Fertilizers are imported from other countries—potash from Germany and phosphates from the United States. Crops are rotated. Danish farmers harvest high yields per acre of such crops as wheat, oats, and potatoes.

The fine breeds of dairy cattle are given the best of care on Danish farms. They are examined regularly to make sure that they are free from disease. They are not allowed to roam freely about in pastures. Food and water in exact amounts are brought to the stalls, and the cows are given the exercise they need. Records are kept of their health and of the milk they give. With intensive farming, Denmark has been able to produce enough food for its own people and still have large quantities of food left over to sell to other countries.

**Finland's farms.** The physical-political map shows that all of Finland lies more than 60 degrees from the equator. The northern part lies beyond the Arctic Circle. This is the same latitude as that of our Yukon Territory and Mackenzie River Valley.

You already know that a country in such latitudes has short summers and long, cold winters. It is a little strange, then, to learn that a great many of the people are farmers. But hardy crops such as barley and rye can be raised far north. The long summer days with their many hours of sunshine help to ripen grain more quickly. Most of Finland's farms are in the lowlands, and its thousands of lakes and the bordering seas help to moderate the temperature.

There are other disadvantages, however. Much of the soil is not good for crops. A large part of the country is covered with swamps and bogs and marshes. In some places areas of hard rock are covered with thin, stony soil. In other places boulders are scattered over the ground, and newly cleared lands are dotted with stumps.

In most parts of Finland it is not profitable to grow grain. Not enough is grown to supply the people, and some must be imported. Butter, cheese, and eggs are exported, for the dairy industry in Finland is very important. Many of the marshy or stony lands can be used for pastures. The climate and the soil are favorable for growing hay, oats, and barley. Finland has a good natural environment for the dairy industry.

The summers are so cool and rainy that the ground dries very slowly. If hay is made on the damp ground, it may spoil. So, as in Norway, the farmers hang the hay loosely on racks. Few haystacks are seen in Finland. When once the hay is dry, it is stored away in the large barns.

**Coöperative societies.** Throughout all of Scandinavian Europe the people have organized *coöperative societies*. Farmers join together to sell what they produce and to buy the things they need. As you know, Scandinavian farms are not large. When a farmer buys small amounts of supplies, he cannot expect their price to be as low as if he bought large quantities. Coöperative societies import huge amounts of machinery, feed, clothing, food, and many other things.

Because they buy in quantity, the prices are reduced. Members of the coöperatives benefit, therefore, by paying lower prices for the things they need.

If a farmer markets his own products, he spends more of his time and gets a lower profit than he would if he sold his products in coöperation with other farmers. Scandinavian Europe has hundreds of coöperatives which handle all the products their members have to sell. For example, the farmers no longer make their own butter. When they did that, a different grade of butter might come from each farm. Instead, the farmers of a district work together in building a creamery. They all haul milk to it and are given credit for the quantity and quality of their products. The cream is separated, and the skim milk is given back to the farmers to feed their animals. From the cream is made butter of a uniform quality—butter that will sell for a higher price. The farmers, then, make a better profit.

Members of the coöperatives are not the only ones who benefit from this plan. People who are not members of the coöperatives derive benefit from the better preparation of foods and the lower prices. Customers in other countries benefit too. Goods passing through coöperative societies are carefully inspected, graded, and stamped. No products can be exported that do not pass rigid tests. Customers can be sure that foods bought through the coöperatives are good.

People throughout the world have heard about the benefits of coöperative societies. They learn that farmers get higher prices for their products, that they pay less for the things they need, and that products are inspected and graded for the benefit of the customer. In many parts of the world similar societies are being formed. There are many of them in Canada.



*Courtesy American Swedish News Exchange, Inc.*

These fine modern apartment houses in Sweden were built by many people working together in a coöperative society.

## Harvest of the Sea

Some of the best fishing grounds in the world are found in the waters bordering Scandinavia. These are shared by many countries. You have learned that the fishermen of industrial western Europe use these fishing grounds. They are more important, however, to Scandinavians, who have fewer ways of making a living. To a large extent fish takes the place of meat in their diet.

**Norwegian fishermen.** Conditions for fishing are especially good along the coast of Norway. The long and irregular coast line provides places for good harbors that are free from ice. Even during the long winters north of the Arctic Circle harbors are not icebound. The physical-political map shows that the water is less than a mile deep far out from the Norwegian coast. Actually, much of it is less than five hundred feet deep. You have learned that shallow places, or banks, are good fishing grounds.

There is another reason why many fish are found off the Norwegian coast. The currents of warm water that drift along this coast meet the cold Arctic waters. The result





*Courtesy Royal Norwegian Information Service*

Fishermen in small boats have surrounded a school of herring and caught them in a huge net. Here the fish are being hauled aboard a big fishing boat.

is a temperature that encourages the growth of food which suits cod, herring, mackerel, and many other kinds of fish.

Fish differ in their habits, just as humans do. Some kinds of fish like one thing and some like another. Herring and mackerel, for example, swim together in large numbers near the surface of the water. Cod and haddock, on the other hand, stay close to the bottom, as do several other kinds of fish.

Some fish keep close to the shore; others remain far out at sea. Most fish migrate, or go from one region to another regularly each year. They usually come to about the same place at about the same time each season. Some years there may be more than other years. Some kinds of fish follow other kinds in order to eat them and their eggs. Cod and mackerel follow herring for this reason.

The best fishing grounds for cod are near the Lofoten Islands off the coast of Norway. Small towns huddled along the rugged coast bustle with activity when the cod-fishing season begins. Thousands of people from all parts of Norway come to catch and prepare the fish. Fishermen go out in large, well-equipped boats on which are carried smaller boats called dories. When they reach the fishing grounds, the dories are lowered into the water. Fishermen climb into the small boats and go far out over the sea to set and bait long strings of fishing lines. Later they remove the fish and return to the large boat with the catch. On the large boat workers

immediately ice the fish or prepare them for market by salting or smoking.

One of the fish markets is Bergen. This quaint old city, with its background of lofty mountains, lies at the head of a deep bay. Here millions of pounds of fish are prepared for Norwegian and foreign markets. Herring are caught in large numbers in the waters near Bergen. Remember that these fish swim close to the surface. They are caught in huge nets which are hauled in by machinery. Herring do not keep well, and so they are prepared for market by the fishermen while the ship is still at sea.

Norwegian fishermen are interested in another kind of sea life. They hunt whales. For these they must sail far away from home, because the whales they hunt live in very cold water. Most of these fishermen go to the Antarctic Ocean, where whales are plentiful.

The Norwegians own more whaling ships and catch more whales than the people of any other country. Some ships are huge floating factories. On small steamers the hunters locate the whales, kill them, and tow them to the floating factories. The whales are dragged aboard, and there they are cleaned and prepared. Some use is made of every ounce of each whale. Parts that used to be thrown away are now ground up for fertilizer. The oil is used for fuel, soap, and machine oil. For some time more whales were killed than were born each year, so a limit has been put on the number that may be caught.

**Other fishermen.** The people of Sweden, Denmark, and Finland also carry on some fishing, but not so much as the Norwegians. Denmark lies within easy reach of the North Sea fishing grounds. It owns the Faeroes, where fishing is the leading industry.

Sweden and Finland are farther away from good fishing grounds. Fish are caught in the sheltered channels between the islands and the coasts and in the lakes. Fishermen go out into the Baltic Sea, but the fish they catch there are not so good as those caught in the



North Sea. Moreover, parts of the Baltic are frozen during the cold winter months. Many of the farmers in Finland combine fishing and farming. Women work on the farms while the men are at sea.

## Scandinavian Forests

A large part of Scandinavian Europe is covered with dense forests. There are lands without forests, too. Some of them are found in the northern Arctic regions, where the high latitude makes the growing season too short for trees to grow. Other unforested areas are high in the mountains, where the temperatures are too low. Many lower slopes, although not so cold, have too little soil. In some lowlands the ground is too swampy for trees. Where the soil is good, land has been cleared for crops and pastures. Though forests do not cover the entire area, this is a natural forest region.

**Using the forests.** The prosperity of the people of Sweden, Norway, and Finland depends to a great extent upon their forests. Wood and wood products are the chief exports of these countries. The forest industries employ a large percentage of the people. Young trees are planted when forests are cut, so this natural resource will continue to contribute to the wealth of Scandinavia.

There would be no advantage in lumbering if there were no market for the products. Many parts of Europe, however, need the wood products that Scandinavian forests can supply. Often lumbering is done on a large scale, and scientific methods are used.

The trees are cut late in autumn before the heavy snows fall, so many of the people combine farming and lumbering. The logs are hauled to rivers on sleds. There the logs are stacked in piles to await the coming of spring. When the ice melts, they are floated downstream to the sawmills. Most of these mills are located near the mouths of rivers and streams. Since the Scandinavian countries have little coal, the waterways are used also



*Courtesy Swedish Travel Information Bureau, Inc.*

Scandinavian timber is floated down the rivers as shown in the picture above. It is stored at places on the river near the mill, as in the picture below. These forests and logs are Swedish. Where in Canada might one see similar scenes?

*Courtesy Swedish Travel Information Bureau, Inc.*







*Courtesy Swedish Travel Information Bureau, Inc.*

On the coast, below the thickly wooded Swedish highlands, there are many busy pulp mills like the big one in this picture, to which timber is brought down the rivers to be made into wood pulp.

to supply hydroelectric power, which is used for cutting the logs into lumber.

Pine trees are used mainly for lumber. Spruce and fir trees are used for making wood pulp, which is needed in manufacturing paper, rayon, and plastics. A large quantity of timber is used for matches. The centre of the match industry is at Jönköping, located at the southern end of Lake Vättern. In the modern factories of this little city, the work is all done by machines. Every year the Scandinavian countries export millions of boxes of matches. You can see on the map that Jönköping has railroad connections with several different seaports.

## Minerals of Scandinavia

Scandinavian Europe does not have many mineral resources. Turn to the map on page 62. You can see that Sweden has large deposits of iron ore both in the northern part, called Lapland, and in the central part, between Lake Vänern and the Gulf of Bothnia.

**Sweden's iron and steel industry.** The most valuable deposits of iron ore are found in the region called Lapland. Find Lapland on your physical-political map. Here, near

the town of Kiruna, the iron ore lies in beds of great thickness. Like Canada's iron ore in Ungava, it is so near the surface that it can be taken from open-pit mines.

As you know, people in our country and in western Europe use huge quantities of coal in making steel. Sweden has very small supplies of coal. Yet its people have long been famous for the manufacture of high-grade steel. In making steel, they use charcoal made from wood instead of coke made from coal. Charcoal, however, is expensive to use, even where there are dense forests. So the smelting of iron and the making of steel are costly processes in Sweden. Partly as a solution of the problem of fuel, Sweden has also developed highly efficient methods in the use of electric furnaces. Swedish steel is of such high quality that it is in demand by other countries that need steel articles of fine quality.

Sweden itself uses most of the iron ore mined in the central part of the country. The ore of Lapland, however, is exported. Though men have long known of the "iron mountains" of Lapland, they had no way of getting the ore to markets. Now ore from the open-pit mines near Kiruna is loaded on the cars of an electric railroad and hauled to the coast. Luleå, the port on the Gulf

of Bothnia, is closed by ice in winter. During these months the Norwegian port of Narvik, which is not icebound, is used.

In summer the electrically driven shovels are operated all day and all night. Work continues even during the few weeks of darkness during winter. A huge power station supplies hydroelectric power for lighting the mines and towns and for operating the mining machinery. Miners do their work under a flood of electric lights.

## Hydroelectric Power

Scandinavian Europe lacks coal and petroleum, but both Norway and Sweden, like Canada, have an abundance of water power. They use it in place of fuel, wherever they can, and they call it "white coal." Water furnishes cheap power, but to use this power easily the water must flow swiftly and regularly. In Scandinavia, rushing rivers and streams flow from the mountains. Rainfall is heavy, forests prevent the water from flowing away too quickly, and lakes act as reservoirs which feed the rivers.

Scandinavia has developed less than one-fourth of its water power. Electricity made in the hydroelectric plants is used in homes, mines, and factories. In the fishing ports of northern Norway, it is used for light and heat. Most of the hydroelectric power is used in southern Scandinavia, where there are more people and more industries.

## SEA TRADE AND SEAPORTS

The people of Scandinavia have no land connections with the rest of the countries of Europe except in the far north, where traveling is difficult. It is almost as though Scandinavia were an island. The people depend on the water to serve them as a highway for communication, and they use its resources to add to their food supply. The Scandinavians have become good sailors and traders.



*Courtesy Royal Norwegian Information Service*

The long pipes coming down to this Norwegian hydroelectric plant supply a strong, even flow of water, so necessary for hydroelectric power.

### WHAT WOULD YOU CHOOSE?

If you lived in one of the Scandinavian countries, what kind of work would you plan to do when you grow up? Write a few paragraphs explaining your choice, or use the subject as a topic for class discussion.

## The Importance of Sea Trade

Norway has a large merchant marine. It has more tons of shipping than many seabordered countries with larger populations. In fact, Norway has more tons of shipping per person than any other country in the world. What is meant by tons of shipping? The term does not mean the weight of



the ships themselves. It means the *capacity* of the ships. Capacity means the amount of space within a ship which can be used for cargo. A ship which is listed as a 10,000-ton vessel can actually carry 25,000 tons of most kinds of cargo. This is about the same as saying that it can carry as much as 50 trains of 40 cars each, or about the same as 1000 airplanes. How many trucks do you think would be needed to haul this much?

Norway's merchant marine has the third largest tonnage in the world; it is surpassed only by Great Britain and the United States. Norway's ships are in excellent condition. More than half of them are new and modern, with motors that give them greater speed than older boats have. Besides being able to carry heavy loads, modern ships can make more trips each year. They save time in loading and unloading, too, because they have machinery that helps to do the work more quickly.

Several of Norway's modern boats are high-speed oil tankers. Yet Norway has no petroleum. The following paragraph helps to explain why tankers are included in the merchant marine.

Perhaps you are wondering how Norway, with its small population and its scanty resources, can use such a large merchant marine. Other than forest products and fish, it has little to sell to other countries. It uses its ships chiefly for carrying goods for the people of other lands. The ships of Norway, operated by hardy Norwegians, are chartered or hired by anyone who needs them. One week, for example, a Norwegian ship may carry a cargo of British machinery from England to Argentina. There it may take on a cargo of farm products and carry it back across the Atlantic to Italy. By carrying goods for other people, the Norwegians earn money with which to buy food and other things that they need from foreign countries.

Sweden has a large trade in bulky goods. You will remember that lumber, wood pulp, paper, and iron ore are exported in large quantities. Many bulky manufactured goods

and raw materials and much fuel are imported. About half the exports are carried on ships of the Swedish merchant marine. Their boats also carry goods for other countries, for this is often a convenient arrangement. If ships are to make money for their owners, they must be kept busy. Liners of Swedish steamship companies also have a share in the passenger traffic across the Atlantic. As in Norway, most of the ships of Sweden's merchant marine are up-to-date.

## Scandinavian Seaports

The Scandinavian countries have many harbors. Some are used mainly by fishing fleets, while others are used by ore boats. The ocean trade is carried on only through a few well-improved harbors. Their ports have modern docks and warehouses suitable for the ships that use them. The largest of the Scandinavian cities are described briefly in the following paragraphs.

**Stockholm, a city of land and water.** Stockholm, the largest city on the Scandinavian Peninsula, is the capital of Sweden. The larger-scale map on page 127 shows that the main part of Stockholm is built on a peninsula, but it spreads over many islands, large and small. About one-seventh of the area of the city is made up of water. Water can be seen from almost half of its houses. You would probably ride in steamers as often as you would ride on streetcars in travelling from one part of the city to another. Do you think it would be easy to find your way about in Stockholm? Would the streets be regular or crooked and winding?

Stockholm has a good harbor. How is it protected from the winds and waves of the sea? The map shows that it has rail connections with the rest of the country. From it railroads run northward along the Baltic plains to the timberlands of Sweden, to the Atlantic seaboard, and southward to the city of Malmö. At Malmö, ferries carry trains between Sweden, Denmark, and Germany.

**Göteborg and its busy harbor.** Another important seaport in Sweden is Göteborg. It faces the North Sea, and its harbor is usually filled with vessels of all types. There are ocean liners that travel across the Atlantic Ocean to America. There are trading ships from the North Sea and the Mediterranean Sea. And there are smaller boats from all the surrounding region. As you can see on the physical-political map, Göteborg has rail connections with Stockholm.

Göteborg is a busy manufacturing city as well as a seaport. Forests of the north supply material for its sawmills. Ships bring in cargoes of raw materials for its machine shops, shipyards, cotton and woollen mills, and glass factories. What raw materials are suggested by this list of factories?

**The port of Oslo.** The chief cities of Norway, like those of Sweden, are near the sea. Oslo, the capital, lies at the head of a fiord and is surrounded by low, wooded mountains. Suburbs climb the hillsides and spread along the fiord. The map on pages 112-113 shows that the fiord extends southward from Oslo and opens into the Skagerrak, an arm of the North Sea. How far is Oslo from the Skagerrak? Notice how the city of Oslo differs from that of Stockholm. What does the larger-scale map show you about the site of Oslo and the area around it?

The physical-political map shows that Norway does not have a dense network of railroads. The few railroads it does have come together at Oslo. With what cities are there railroad connections? The long rivers flow toward the south. These transportation routes help to make Oslo the gateway for the densely populated section.

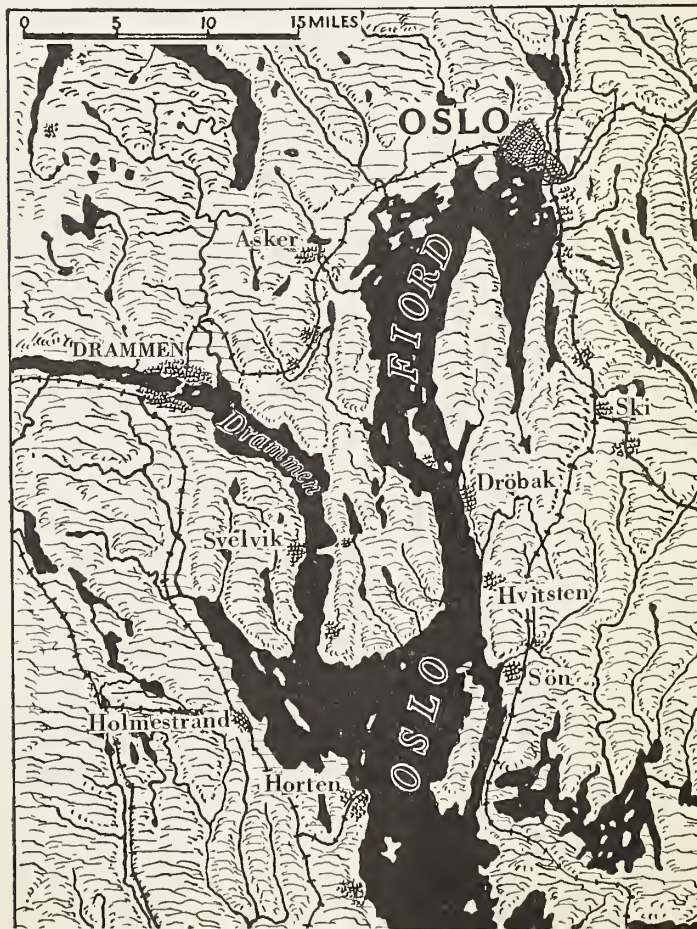
**Copenhagen, an island city.** The capital of Denmark is Copenhagen (København). One part of the city extends across a deep,



A map of Stockholm and the area around it.

narrow channel to a neighboring island. This channel has formed an excellent harbor. Because of its harbor and its ideal location at the entrance to the Baltic Sea, Copenhagen has grown from a small fishing village to a busy port of trade. Turn to the map on page 128 to see the location of Copenhagen.

A map of Oslo and the area around it.







An outline map of Denmark.

Use the map above to estimate the distance from Copenhagen to Sweden. This short distance makes it easy for Copenhagen to get electricity from Sweden. It is sent by cables beneath the sea. What natural conditions help to explain why Sweden makes more electricity than Denmark?

Most of the Danish goods bound for foreign markets pass through Copenhagen. This port is used by other countries, too, and a considerable transit trade is carried on. One-fourth of all the people of Denmark live in Copenhagen. Does Denmark have many large cities? You can answer this correctly if you look at the cities on the maps.

**The new-old city of Helsinki.** Helsinki is the capital of Finland. It is actually an old city, for it was started almost four hundred years ago. It looks new, however, because

many of the large buildings have modern designs. One of the latest is the stadium, built in 1938. It has a high tower, a radio station, and a seating capacity of 50,000. It helps to give the Helsinki sky line a very modern appearance. Wide, clean streets add to this effect. As in other Scandinavian countries, the people like outdoor sports. If you were in Helsinki during the winter, you would enjoy the skating, hockey games, automobile races on the frozen harbor, and skiing on the hills. In summer the scene is just as gay, for hundreds of yachts dot the harbor and sail up and down the coast.

Helsinki is also the chief port and commercial centre of Finland. Turn to the map to find on what body of water Helsinki is located. As in other Baltic ports, icebreakers keep this body of water open as long as possible in the winter. Use the scale of miles to see how far Helsinki is from the North Sea. Why is this a disadvantage?

## RESOURCES AND PRODUCTS

On pages 117-125 you learned that the principal natural resources of the Scandinavian countries are farm lands, the sea, forests, and mines. Below is a list of the principal exports. Match each export with the natural resource upon which it depends.

|           |           |
|-----------|-----------|
| iron ore  | matches   |
| butter    | fish      |
| eggs      | bacon     |
| machinery | lumber    |
| paper     | wood pulp |

## CAN YOU EXPLAIN?

What relation do you see between the following three sets of facts?

1. During World War II butter, bacon, and eggs were very scarce in Great Britain. Newspapers were cut down to a very small size. Few books were published, and these were printed on paper of very poor quality.

2. During the war German armies occupied Denmark and Norway and closed the Skagerrak to trade.

3. In ordinary times Great Britain carries on a large trade with the Scandinavian countries.

## OTHER SCANDINAVIAN HOMELANDS

In Denmark, Norway, and Sweden, there once lived a hardy, adventurous people who were known as Northmen. They travelled to lands that were strange to them, they explored, and they made settlements. These sea rovers were called Vikings.

**Possessions of Denmark and Norway.** The Faeroes and Greenland are owned by Denmark. Fishing and raising sheep are the most important occupations of the people living on the Faeroes. The population is small, but that of Greenland is even smaller. Most of Greenland is buried under an icecap. The people, most of them Eskimos, live on the rocky coast. Greenland is the largest island in the world. Find the Faeroes and Greenland on the map on pages 22–23.

Far to the north, in the icy waters of the Arctic, lies a group of islands that belong to Norway. They are now called Svalbard; they used to be called Spitsbergen. Svalbard is a region of sharp peaks and large glaciers. Norway is interested in these lands for two reasons. In the first place, they have rich deposits of coal. Because of difficult conditions, however, mines are usually kept open only a few months each year. In the second place, Svalbard is an excellent air base.

**Air routes over Svalbard.** Find Scandinavia and Svalbard on the polar map on page 130. This map is made with the North Pole in the centre. You can tell directions easily if you keep in mind that north is the direction toward the North Pole. Remember that meridians are the lines that extend north and south. They meet at the poles and help to determine the longitude of places on the earth. Notice how they meet at the North Pole on this map. Not all the meridians are drawn to this point because it would make the map more difficult to read.

Find the meridians which indicate  $10^{\circ}$  east longitude and  $30^{\circ}$  east longitude at the right-

hand side of the map. By following these, you will see that the meridian  $10^{\circ}$  east longitude is near Oslo and passes through the western edge of Svalbard. This may not seem like the western edge, but you must realize that you are following the meridian toward the North Pole. The meridian of  $30^{\circ}$  east longitude passes through the eastern edge of Svalbard. Thus you see that the islands extend between  $10^{\circ}$  and  $30^{\circ}$  longitude. Notice, too, that the meridian of  $30^{\circ}$  east longitude runs along the eastern boundary of Finland. Is the distance in miles across Svalbard as great as that from Oslo to eastern Finland? Why not?

This map also shows air routes either in operation or planned for future operation. Find the air route which crosses Svalbard. This probable future line connects Vancouver and Moscow. Air bases are needed for refueling stations, emergency landing fields, and repair shops. Svalbard is in a favorable position to render these services.

**Lapland, a far-northern region.** Lapland is not a geographical or political division and does not have definite boundaries. It stretches across the northern parts of Norway, Sweden, and Finland. This dreary Arctic region is the home of short, sturdy people called Lapps. Most of them wander from place to place in search of grass and moss for their herds of reindeer. So important are reindeer, that Lapps measure their wealth in the number they own. They get meat and milk from the reindeer and make clothing of its skin. In winter they hitch reindeer to sleds for travelling. Lapps who tend herds of reindeer must wander in search of pasture, and they live in tents. Some Lapps live in small earth-covered or log houses, and fish and hunt for a living.

These frozen lands of the north are gradually being opened up for modern settlements. The iron mines of Kiruna are in Lapland. New mines, hydroelectric power, railroads,





A map of the world with the North Pole in the centre.

and new ports are all helping to bring settlers to this region. In recent years a road which can be used by automobiles and trucks has been built to this far-northern part of Norway. Until this road was built, the region could be reached only by ship or airplane. Many tourists go to the northern coast to see the midnight sun.

**The island of Iceland.** Turn back to the physical-political map and find the island of Iceland in the North Atlantic. Iceland is farther west than any other part of Europe. When it is noon in London, it is only ten o'clock in the morning in Iceland, for the island uses the sun time of the meridian which is  $30^{\circ}$  west of London.



The map on this page will help you understand why the population of Iceland is small. You can see that most of it is covered with mountains. Glaciers and volcanoes, rushing streams and hot springs give variety to the mountainous landscape. The gushing hot springs are called *geysers*. Find the Great Geyser on your map. These geysers supply the people of Iceland with hot water and steam for heating, cooking, and washing. They have no coal or wood to burn. They rely on the hot springs for heat.

Grass is the natural vegetation over much of the island. It is used as pasture for sheep, cows, and ponies. Iceland specializes in raising sheep of fine quality. They are small, their wool is long, and they do not require much food. The farmers are interested chiefly in dairying, for Iceland is not a good place for growing crops. There are small farms, however, in the southern part, where the land is lower and the weather is warmer.

The Icelanders are progressive in other ways. They have developed water power so that they can have electricity on the farms as well as in the towns. They have piped the natural steam and hot water to houses, greenhouses, and public laundries. Like other Scandinavians, they have learned the benefits of coöperative marketing and buying. Even though this sparsely populated island is far from other countries, the people have a university, daily newspapers, and other things found in densely populated regions. There are no railroads on the island, but trucks and automobiles are used for transportation. The roads are good, and bridges span the rivers.

Although Iceland is in the North Atlantic, it is a long distance from the route used by most ships. Nevertheless, many boats visit Iceland each year. As you know, Iceland is in the midst of good fishing grounds. Icelandic fishermen, as well as those of other countries, use Iceland as a base of supplies. Ships stop at Reykjavik, which has the best harbor, to pick up the products Iceland exports. The people of Iceland are depend-



A map of the island of Iceland.

ent upon other countries for many of their supplies. They import food, clothing, hardware, machines, drugs, paper, and a great variety of other goods.

Find Iceland on the polar map on page 130. You see that Iceland is on the great-circle route between Canada and some of the cities of northern Europe. Planes flying over this route stop at airfields on Iceland for fuel and servicing. What differences do you think these planes may have made to the people of Iceland?

**Iceland is not all ice and mountains. This is a small, busy village on the eastern coast. The boats lying in the water near by are fishing boats.**

*Courtesy Legation of Iceland*





# THE GEOGRAPHY WORKSHOP

## I. A SCENE IN NORWAY

In the description below, choose the right word or phrase from those in parentheses.

The picture on this page was taken on the shores of a long lake 70 miles north of Oslo. The lake is at the bottom of a narrow (fiord, valley). In the picture you are looking down upon the land of an agricultural school from (a hill, an airplane). The straight, dark lines are racks with (hay, fish, laundry) drying on them. Part of the land is farmed and part is covered with (snow, forest, rocks). There are (only cone-bearing, only broadleaf, both cone-bearing and broadleaf) trees in the picture. The buildings are (a small town, factories, farmhouses and barns).

## II. THE WORLD

### IN YOUR OWN COMMUNITY

Now you have become acquainted with more of the world than you knew before. You have learned more about your own community, too. Your new knowledge will be useful to you in following the suggestions given below. In the following paragraphs you will find suggestions that may be followed by the groups studying natural environment, social environment, and history.

*Courtesy Royal Norwegian Information Service*



### *For the Natural Environment Group*

You may live a great distance from the Mackenzie River Valley, but you will find it interesting to compare it with Finland. You could compare the latitude, climate, and natural vegetation of the two regions. You could compare also the products, means of transportation, and density of population. In which of the two are the natural resources more fully developed?

By great-circle measurement, what Scandinavian land is nearest your own home? Do not forget the possessions of Scandinavian countries in looking for the nearest place.

There are probably war veterans in your community who can tell you about some of the Scandinavian lands. A great many soldiers, sailors, and flyers saw Iceland. Many others saw Greenland or Norway.

### *For the Social Environment Group*

You should make a survey of your community to discover whether it has any industries that are also carried on in Scandinavia. Does your community use hydroelectric power to the same extent as do the Scandinavian communities? Why do both Canada and Scandinavia make so much use of their water power?

If fishing is carried on in your community, you should compare fishing in Canada and in Scandinavia. It is interesting to note that Norway exports larger quantities of fish than any other country. But Canada, too, sells great quantities of fish, including our expensive lobster and salmon. Canada actually receives more money for the fish she exports than does Norway.

Man has for centuries been taking minerals from the mines, trees from the forests, and crops from the land. Often he has not thought of the future and has exhausted the mine, or the forest, or the land. When he has done this, nature has punished him.

In some lands the people have been very careful to protect their natural resources. This wise policy is called *conservation*. Can

the people of your community profit by studying how the Scandinavians practise conservation?

#### *For the History Group*

No doubt you know that the first Europeans to reach North America were likely Scandinavians who came by way of Iceland and Greenland. No one is sure how much of Canada they saw. Are there any stories about their reaching your part of the country? If so, how good is the evidence?

In 1638 the Swedes founded a settlement on the Delaware River in the United States. Many years later Scandinavians began coming to Canada. They settled especially in the mining districts of Northern Ontario and in the provinces of Manitoba and Saskatchewan. In these areas many communities are made up almost entirely of people whose ancestors came from Scandinavia.

If your home is in one of these areas, you can find people who were born in Scandinavian countries. In almost any section of Canada you will find a few people of Scandinavian ancestry. Even the people whose parents or grandparents came to Canada may speak a Scandinavian language.

Do you know how to recognize Scandinavians by their names? Most Scandinavian names end in a syllable that means "son." In Swedish this ending is spelled *son*. In Norwegian and Danish it is spelled *sen*.

Edvard Grieg was a famous Norwegian composer. You have probably heard some of his music, for it is often played by orchestras on the radio. You may know, too, the music of the famous Finnish composer, Sibelius.

Perhaps you have heard of the *Kalevala*. It is a famous collection of the old, old songs of Finland.

### III. WHY SEASONS CHANGE

On page 114 you read about long summer days and short winter days. You know that in Canada days are longer in summer than in winter, though only in our far north is the contrast as great as it is in Scandinavia. Perhaps you have wondered why there are several seasonal changes. The reason is not easy to understand. You will need to think as you follow the instructions given below.

You know that the earth turns or rotates once every 24 hours. That is why we have day and night. Perhaps you have used a

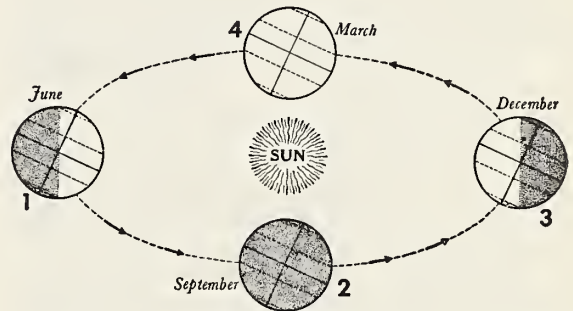
globe and an electric light to show how half the earth is always lighted and half is dark. The lighted half seems to move around the earth from east to west as the earth rotates. In fact, new areas are constantly moving into the light at the west and out of it at the east.

#### *The length of day and night*

The earth also revolves around the sun; that is, it moves around the sun in a huge circle. A year is the length of time it takes the earth to travel once around the sun. With a globe and an electric light, you can see how this revolution around the sun gives us our seasons. We have seasons because the earth is tilted toward the sun in summer and away from it in winter.

If your classroom globe is mounted on a rod, it is already set at the right slant for this experiment. If you have a cradle-mounted globe, set it so that a point on the Arctic Circle is exactly at the top, and the opposite point on the Antarctic Circle is exactly at the bottom.

Place your globe on a table, with the North Pole tilted toward the light. Adjust the height of the lamp so that the light shines directly on the Tropic of Cancer. The drawing will make this clearer.



Now your globe is in the position of the earth on June 21. The noonday sun is directly overhead at the Tropic of Cancer. You may turn the globe round and round, as the earth rotates during a day, but the light still shines directly on the Tropic of Cancer.

Notice how far the lighted half of the earth extends to the north. It reaches *across the pole* to the Arctic Circle on the other side. If you were at North Cape you could see the sun at midnight straight across the North Pole. You can turn the globe round and round, but the whole area within the Arctic Circle remains always in the light.



At the south, the light barely reaches the Antarctic Circle. Can you explain from this why there is no sunlight within the Antarctic Circle on June 21?

Now move the globe to the point numbered 2 in the drawing. Keep the North Pole pointing in the same direction as it was before. Now the globe is in the position of the earth on September 22. The noonday sun shines directly down on the equator and the light reaches exactly from pole to pole. The length of day and night is the same all over the earth.

From what you have learned, you should be able to explain what happens when the globe is in the positions marked 3 and 4 in the drawing. If you have four globes of the same size, set them all up at once. You can see what happens a little more easily than if you have to move the globe each time.

### *Seasonal temperatures*

Now you understand why summer days are longer than winter days. Can you think how the difference in temperature might be explained? Of course, the longer hours of sunlight make a little difference, but there is a more important reason for the higher summer temperatures.

You know that the sun seems hotter at noon than in early morning or late evening. It seems hotter because it is higher in the sky. Its rays shine down more directly and give the earth more heat.

You can prove that the more direct rays of the sun are warmer than the more slanting rays. Keep a temperature chart for a week. Put down each day the temperature at eight o'clock in the morning, at noon, and at four o'clock. What time of day is usually warmest? You may not get the same answer every single day. Clouds or a change in the wind direction may lower the temperature.

You have known for a long time that the noonday sun is higher in the sky in summer than in winter. Therefore the rays of the sun are hotter in summer than in winter. They are more direct. In winter they are more slanting and therefore they are cooler.

### IV. REASONS TO FIND

In the list at the left in the next column are statements about Scandinavian countries. All are true. At the right is a list of reasons why the statements are true, but the reasons

are not in correct order. Copy the statements, adding the right reason to each one. Be careful. You may find a reason that seems almost right, but if you look farther you will find a better one.

- |   |  |
|---|--|
| 1. Land travel in the Scandinavian Peninsula is difficult               | a. because there is water all around it except in the far north.     |
| 2. The Scandinavian Peninsula is cut off from the rest of Europe        | b. because of rough surface, short growing season, and cool summers. |
| 3. More iron ore than steel is exported from Sweden                     | c. because large areas are more suitable for forests than farming.   |
| 4. Wood products are the leading exports of Norway, Sweden, and Finland | d. because of the many mountains, rivers, and fiords.                |
| 5. Large areas in the Scandinavian countries are not good farm land     | e. because the country has no deposits of coal.                      |

### V. WHICH ONES DO NOT BELONG?

Do you remember the printer you met on page 106? He is in trouble again. Help him pick out the pictures that could not have been taken in Scandinavian countries.

1. An oil well beside the sea.
2. An orange grove.
3. Lumbermen working in a forest.
4. A long train of coal cars leaving a coal mine.
5. A fishing fleet putting out to sea from a narrow inlet.
6. Workers packing eggs for shipment.
7. Cows grazing on mountain pasture.
8. The sun shining down from directly overhead.
9. A man riding in a sled pulled by reindeer.
10. An active volcano.

### VI. NEWS FROM SCANDINAVIA

You may have to watch the newspapers for several days to find a news story from a Scandinavian country. When you do find one, ask yourself two questions. First, can you understand the news better because of anything you have learned from your study of Scandinavia and from the maps in this book? Second, does the news story add anything to your knowledge of Scandinavia?



## *Living in Central Europe*

### A VARIETY OF LANDS AND PEOPLES

You have seen why the countries of industrial western Europe and Scandinavian Europe may be called maritime countries. Much of their progress was due to their taking advantage of the opportunities for ocean trade and transportation. They developed ports for their own use and for the use of other countries. The countries of industrial western Europe and Scandinavian Europe helped develop a large part of the North Atlantic trade. You come now to the study of central Europe, which is almost a land-locked region, as you can see on the map above. Notice that the word central suggests that it is beyond the edge of the continent.

**A transition area.** Central Europe is influenced more by the land than by the ocean. To be sure, it has a few strips of coast on the North Sea, on the Baltic Sea, and on the Black Sea. Even so, you can see that the region is almost surrounded by land. Some of the peoples have felt as if they were hemmed in. From time to time they have pushed outward from their central position.

The countries of central Europe have depended upon one another for many of their foods, raw materials, and manufactured goods. They trade with one another and with outside countries. But it is not so easy for central European countries to trade as it is





Burton Holmes from Ewing Galloway

Switzerland's famous mountain, the Matterhorn, towers over this picturesque village tucked snugly in a valley formed by a glacier.

for those countries that have good harbors near the great ocean routes.

The countries of central Europe may be said to make up a *transition area*. By this we mean an area which lies between two unlike regions and which is somewhat like those on either side. The western part of central Europe has land and people and factories that remind you of industrial western Europe. The eastern part of central Europe has land and people and agriculture which are similar to regions farther east. As you study, you will see how the central position of this region has helped to make it different from other regions you have studied.

**Many kinds of land.** Millions of years ago, central Europe lay under a great sea. On some parts of the sea floor, sand was deposited. In other places, clay settled down in great beds. Slowly the sea floor was uplifted and the region became land. In some places the rocks were wrinkled. Layers of rock hundreds of feet thick were bent upward and downward to form mountains. Sometimes these layers broke and slipped, making

steep cliffs. These two kinds of movement formed the great mountain ranges.

The Alps extend into central Europe, and the Great Lowland Plain stretches across the northern part. Eastward toward the Black Sea lie other large plains with mountain ranges separating them from each other. The valley glaciers and hundreds of streams have made the mountains lower. They have widened the valleys, and they have carried and deposited the material which they cut away.

Some of the material was deposited on the plains, some was left in river valleys to become fertile soil, and some was carried to the sea. Sometimes deltas were built at the mouths of the

rivers. All these changes have helped to produce a variety of lands which the people use in different ways.

The arrangement of highlands and lowlands causes central Europe to slope in two directions. It slopes to the northwest and to the southeast, as shown by the flow of the rivers. Thus the northern part of central Europe faces the North Sea and the Baltic Sea, while the southern part faces the Black Sea. These conditions also help to account for the different interests of the people within this great area.

**Many different peoples.** Central Europe is the homeland of the Teutonic peoples. Some of the Teutonic tribes invaded France and others invaded Britain. Many tribes moved out of central Europe to the southeast, south, and southwest. Others remained in central Europe.

The word Teutonic refers to people who spoke a group of related languages. English, the Scandinavian languages, Dutch, and German all belong to this group. The people who spoke the language did not all have the

same ancestors. They were a mixture of many tribes who had migrated into central Europe before written history began.

East of the Teutonic peoples lived the Slavs. It is believed that the Slavs were at first a small group of people living south of the Baltic Sea. A little less than two thousand years ago, some of the Slavs began to migrate. They moved westward as far as central Germany, eastward into Russia, and southward toward the Black Sea. Today, in Poland and Czechoslovakia and eastward across Europe, most of the people speak Slavic languages. This does not mean that they are all descendants of the early Slavs. Many of them are, but the languages have been taken over by other people, too.

During the Middle Ages many invaders came into central Europe from the east. One group was the Magyars, who settled on the lowlands of Hungary about a thousand years ago. They brought with them their Asiatic language, which is still spoken in Hungary. It is quite different from both Slav and Teutonic languages. The people themselves are largely a mixture of Magyar and Slav.

**Study guides.** The following questions will help you to understand central Europe. Keep these questions in mind as you read.

You should be able to answer each question when you finish reading.

1. What natural regions does central Europe share with industrial western Europe? What other natural regions does central Europe include? (V)

2. How does the climate of the lowlands of central Europe change from west to east? How does the climate of the North Plain differ from that of middle and lower Danube regions? (V)

3. What kinds of work do you associate with each natural region? Why do the crops of the middle and lower Danube regions differ from those of the North Plain? (V)

4. How important is the Danube River to the people of central Europe? To which part of central Europe is it most important? (V)

5. Why is the North Sea of more value to central Europe than the Baltic Sea? (I, V)

6. Which parts of central Europe face the North Sea and the Baltic Sea? Which parts face the Black Sea? How are these areas different? (V)

7. What parts of central Europe are most densely populated? Why? (III, V)

8. What are the most important occupations of the people of central Europe? Why are these occupations carried on where they are? (I, IV)

9. Why do the countries of central Europe trade among themselves? (II)

10. In what ways is Austria similar to Switzerland? How is it different? (V)

## WHAT WE CAN READ FROM MAPS

### GETTING ACQUAINTED WITH CENTRAL EUROPE

1. The region called central Europe in this book lies between the Scandinavian lands to the north and the Mediterranean region to the south. It includes all of Germany except the Rhine Valley, all of Poland, Czechoslovakia, Switzerland, Austria, Hungary, Romania, and Bulgaria, and all of Yugoslavia except the coastal lands.

On an outline map of Europe, print the names of the countries that make up the region called central Europe. Use the map on pages 58-59 to locate each of these coun-

tries. With a dotted line, separate the Rhine Valley and the coast of Yugoslavia from the countries whose names you have printed on your map. The map on page 135 will help you to see where to put the dotted line. Next, color the part of your map that shows central Europe.

2. Although central Europe does not border on an ocean, it has coast lines on three seas. Print the names of these seas on your outline map. What large country borders central Europe on the east? What countries border it on the west? What countries of central Europe are without coast lines? What countries touch the three seas?



## HIGHLANDS AND LOWLANDS

1. If you turn to the relief map on page 60, you will find that a large part of central Europe is called the Great Lowland Plain. What does the physical-political map on pages 58–59 tell you about the altitude of the land in this region? You have already seen that France, Belgium, and the Netherlands share this great lowland region.

2. Turn again to the physical-political map and find other lowland areas in central Europe. Now use the relief map. What mountains surround the Plains of Hungary? Notice the long river which flows southeastward through these plains. What name is given to the low plain near the mouth of this river? Find these two lowland areas on the physical-political map. What is the name of the long river?

3. Refer again to the relief map and find the Alps. What name is given to the highlands that lie between the Alps and the Great Lowland Plain? What is the name of the mountain range that extends from Poland into Romania? In what direction do these mountains extend? What does the physical-political map show about the altitude of most of the Central Uplands? Which mountains are higher, the Alps or the Carpathians?

## RIVERS AND SLOPES

1. The part of the Great Lowland Plain which is in central Europe will be referred to as the North Plain. You can see on the physical-political map that it is crossed by four main rivers. The source of each river is in the highlands to the south. Trace the courses followed by the Weser, the Elbe, the Oder, and the Wisla (Vistula). They all flow northward, showing that the land of the northern part of central Europe slopes northward. Near the mouth of each of these rivers you see one or more ports. On which river is each of these ports: Hamburg, Bremen, Stettin, and Danzig?

2. Find the Danube River on the physical-political map. It rises in the Black Forest and flows east and south. Trace the river to the Black Sea. Notice that it has tributaries that rise in the mountains north and south of the Danube. This part of central Europe slopes to the south and east. It may be said to face the Black Sea. Countries that border the Danube or through which it flows are referred to as the Danube countries.

3. Mountains or higher land from which rivers flow in opposite directions are *divides*. A divide separates the area drained by one river from that drained by another. Find some divides on the relief map on page 60.

## WHERE PEOPLE LIVE IN CENTRAL EUROPE

Refer to the population map on pages 18–19 and notice that there are great differences in the density of population in the different parts of central Europe. Try to answer the following questions.

1. How does the density of population of central Europe compare with that of industrial western Europe? with that of Scandinavian Europe?

2. Find on the map the part of central Europe that has the most people. Does the physical-political map suggest any reason why so many people can live in this thickly settled region? Does the map on page 62 show that the large area of dense population has coal and iron? Does the physical-political map show that the people of central Europe have good transportation? Is it easy for them to trade with the other parts of Europe? Why or why not?

3. What relation do you see between density of population and high mountains? How can you explain this relation?

4. If you were to travel across central Europe from Berlin to the Black Sea, what changes, if any, would you notice in the density of population?

5. How does the population of the Danube Valley compare with the population of the Rhine Valley?

## CLIMATE AND VEGETATION

In order to answer the following questions, you will need to use maps that show rainfall, growing season, and vegetation.

1. How do mountains affect rainfall? In general, do they have more or less rain than the plains near by? Look at the Alps on the rainfall map on pages 12–13 to check your answer. How do you explain this difference?

Suppose the Alps extended in a north-south direction at the western edge of central Europe instead of an east-west direction. How would such a change in the mountains affect the rainfall of central Europe? Check by noting how mountains in British Columbia affect rainfall in Western Canada.

2. Use the map on pages 14-15 to find the length of the growing season in the Plains of Hungary and the length of the growing season in the Wallachian Plain. The Carpathians help to shut off the cold winds. On which side of the Danube Valley are they?

3. Turn to the map on pages 16-17 to see what kind of natural vegetation is found on the North Plain. What kind is found along the north coast of the Black Sea? How do you explain this difference? Name one place where there are cone-bearing forests.

## THE REGION OF THE NORTH PLAIN

Central Europe has a share of the Great Lowland Plain which stretches from southwestern France north and east all the way across Europe. The important rivers of the North Plain flow from the mountains to the seas. Tributaries from east and west join the main streams, forming a dense network of waterways. For the most part, the North Plain is fairly level, but here and there are hills and ridges of material deposited by the ancient ice sheet. The North Plain slopes toward the north and northwest to the shores of the Baltic and North seas, and ends in low, sandy marshes.

### Farming on the North Plain

Turn to the map on pages 20-21 and trace the parallel of 50° north latitude across Canada. Now trace the same parallel on the physical-political map of central Europe. You can see that the North Plain of central Europe is north of this parallel. Farm lands on the North Plain are in latitudes corresponding to those of Canada. The summers are short, but the days are long. It has not been easy to improve the land of the North Plain so that crops could be grown. But today this region is one of the most productive areas in Europe.

**Climate and soil.** The North Plain is a farming region. As in Sweden and Finland, long days help crops to grow and mature before frost. Temperatures in the western part are neither extremely cold in winter nor extremely hot in summer. There the temperature is moderated by the winds that blow

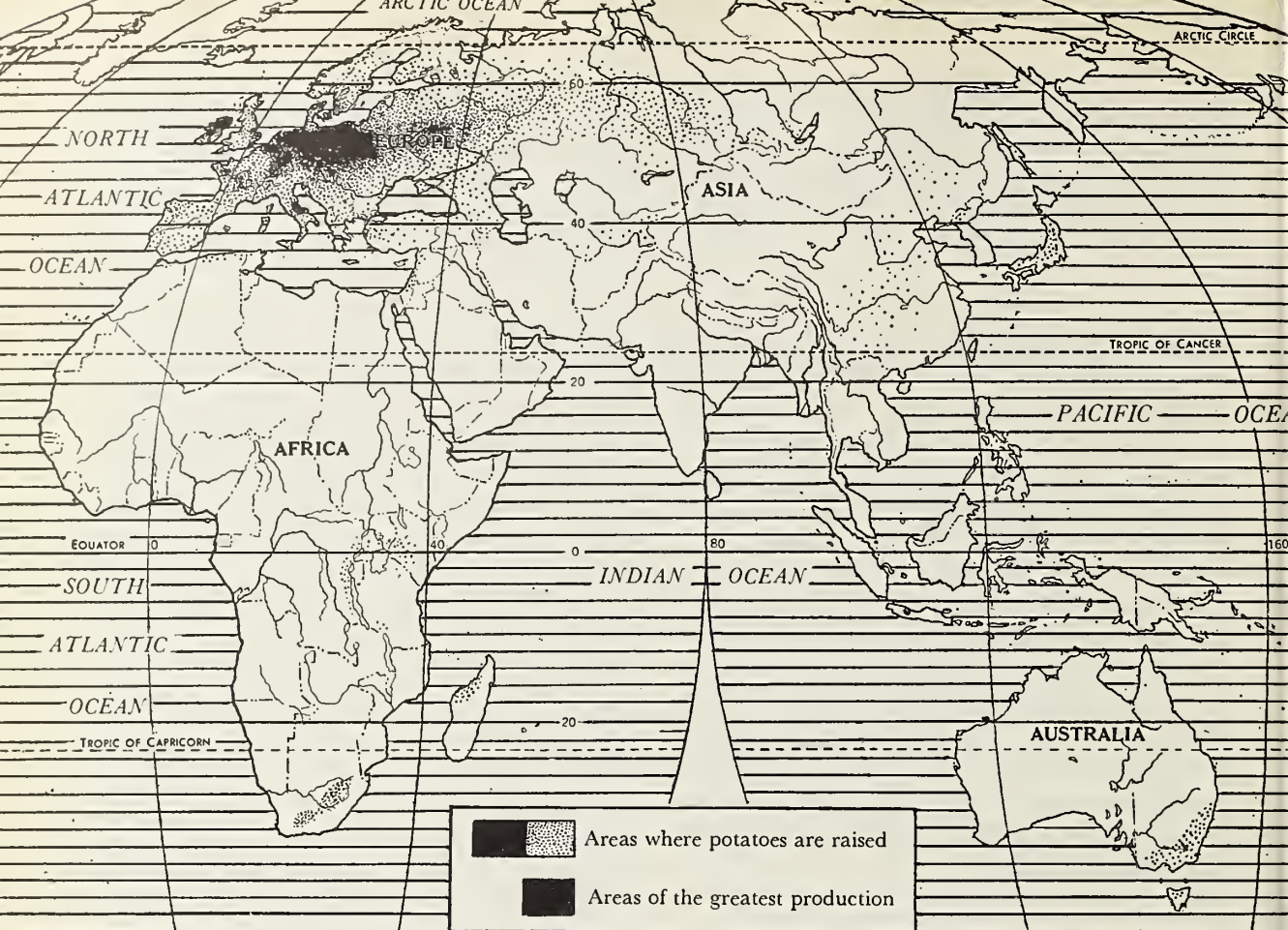
from the Atlantic. The climate changes, however, as one travels eastward. Temperature is influenced less and less by the winds from the ocean and more and more by the winds from the land. Winters are colder and summers hotter. The climate, as one travels eastward, becomes continental.

The winds coming from the ocean carry moisture far inland, so that all parts of the North Plain have plenty of rain for crops. But rainfall gradually decreases as the winds blow farther east over the wide stretches of the plain. In the eastern part of the North Plain most of the rain falls in summer when it does most good for the crops, but snow often covers the ground for several weeks in the winter.

Much of the soil of the North Plain is coarse and sandy. The ancient ice sheet pushed southward and spread over this region. It deposited gravel and sand brought from the lands to the north. In some places it left piles of rock and soil which dammed up streams and formed swamps. In other places long ridges of coarse material were left. Here, as in Denmark, men have had to solve the problem of making poor, sandy soils yield abundant crops.

Scientists studied the wide stretches of sandy and swampy soils in an effort to improve them. Land was first drained and then fertilized. Crops were carefully selected to suit particular regions. Rotation was studied, and farmers were told in what order to plant their crops. Through the use of these modern methods of farming, many parts of the North Plain have become important food-producing regions of Europe.





A map showing where potatoes are grown in lands overseas.

**Farm products.** Turn to the map on page 79 and notice that rye is grown in all parts of the North Plain. It is the most important grain crop. From rye is made the dark bread eaten by millions of people in central Europe. Except in the river valleys, the soils are sandy. But rye can be grown even on the poorest soils when they are properly fertilized. You can see on the map that rye production drops off on the plains of France. There both the soil and the climate are favorable for growing wheat.

Even more important than rye are potatoes. You can see on the map above that enormous quantities of potatoes are grown on the North Plain. They do well in regions that have sandy soils and cool, moist climates. More potatoes are grown on the North Plain than in any other region of the

same size anywhere in the world. They are used in a variety of ways. Farmers raise them, not only as food for people, but as substitutes for things they do not have. Potatoes are dried and then ground into flour. This flour is used for making bread, just as we use flour made from wheat in making our bread. Corn is not grown on the North Plain, and since it would be expensive to import it, animals are given potatoes as feed. Starch is made out of part of the potato crop, and from another part fuel alcohol is made. Potatoes are an extremely important vegetable crop because they can be used in so many ways.

The northernmost part of central Europe borders the North and Baltic seas. There the natural environment is much like that found in Belgium, the Netherlands, and Denmark. The coast is low, and in some places it is

very wet. As in the neighboring countries, much of the land has been drained and is now used for pastures or for raising oats. Cattle are kept for dairy products rather than for meat. Hogs are the most important animals raised for meat. Large numbers of hogs are fed on potatoes and on the skim milk that is given back to the farmers from the dairies.

The map below shows you that the southern part of the North Plain is the chief sugar-beet region. Magdeburg, which you can see on the physical-political map, is the centre of this important district. Here the soil is richer and, in addition, is heavily fertilized. The climate favors the raising of sugar beets, for the springs are cool and moist and the autumns are cool and dry.

Where in Canada are large quantities of sugar beets grown? Try to find out as much

as you can about the soil and climate of these parts of Canada.

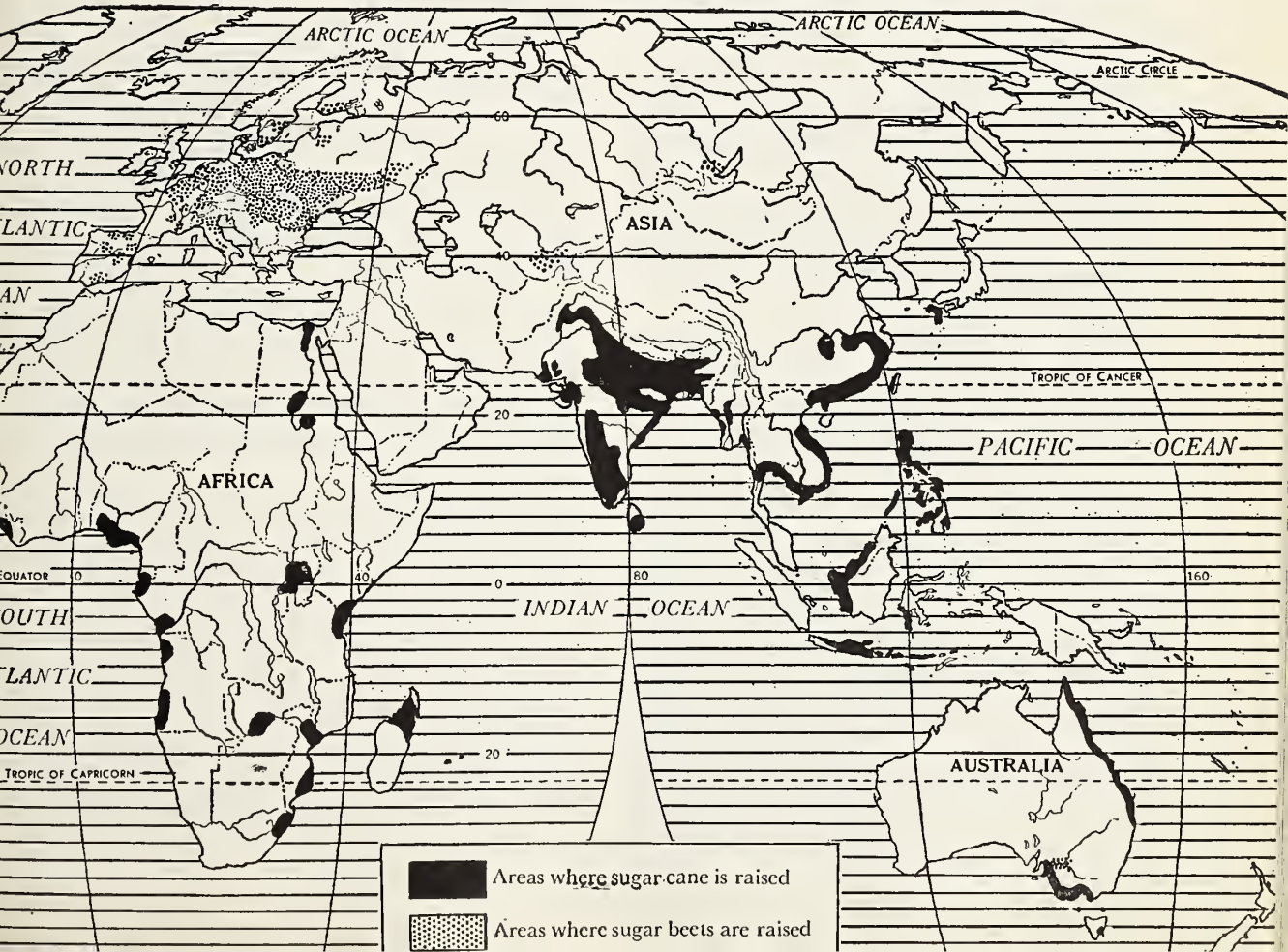
If you turn to the map on pages 18-19, you will see that this region is in the densely populated area of the North Plain. This, too, is an advantage for raising sugar beets. As you have already learned, this crop requires many workers from the time when the beets are planted till the time when they are hauled to the sugar refinery.

Beet sugar is important in Germany. Scientists have done much to increase its output. They have improved the quality of beets and the method of extracting sugar.

## Manufacturing

In the eastern part of the North Plain more people are engaged in agriculture than in manufacturing. Toward the west there is a

A map showing where sugar beets and sugar cane are grown in lands overseas.







Philip Gendreau

Transportation is made easy in Germany by wide four-lane highways such as this one.

gradual change, until more people engage in manufacturing than in agriculture. At the southern edge of the North Plain lies one of the leading industrial districts of the world. It is an eastward extension of the great industrial district about which you learned in your study of western Europe.

In this region are found three advantages for manufacturing. There is an abundance of coal, and there is hydroelectric power for running machinery. Raw materials also are found within easy reach of the manufacturers. The factories require many workers, so this has become a densely populated area, as you can see on the map on pages 18-19. To simplify the transportation of materials to and from factories, there is a dense network of railroads and roads, and there are also canals and navigable rivers.

Within this great industrial district of central Europe are two coal fields which have become the basis for two large manufacturing areas at the edge of the North Plain.

**Mines and factories in Saxony and Silesia.** Saxony and Silesia are names given to districts at the edge of the North Plain. On your map you can see that the city of Breslau is near the centre of Silesia. Saxony is a triangular-shaped region with a base formed by the Ore Mountains. Both of these regions are rich in mineral resources. Their coal fields form the basis for many industries. One variety of coal from these fields is called

*lignite*. This is a soft brownish black coal. We in Canada have much of it scattered over western Canada from Northern Ontario to British Columbia and Yukon. Canada's largest deposit of lignite is in southern Saskatchewan. It cannot be used as coking coal because it is of poor quality, but it is used for heating homes and factories and for operating electric power plants. As well as lignite, many other minerals are found in Saxony and Silesia. There are iron, silver, lead, zinc, and other kinds of mines.

Almost all of Saxony lies in the valley of the Elbe River, one of the most fertile parts of the North Plain. While many of the people farm, a greater number work in mines and factories. There are few densely populated regions that have so large a percentage of urban population as Saxony. The chief industrial centres are Dresden, Chemnitz, and Leipzig. Find these cities on your physical-political map. Now turn to page 62 and find these three centres and the coal fields on the coal and iron map.

Machinery of all kinds is produced in Saxony. In Chemnitz are huge textile mills that make cotton and woollen goods. Dresden has long been famous for the china that bears its name. Dresden china, however, is made, not in Dresden, but in a town near by. Perhaps you have some Dresden china at home. Leipzig has always had a large printing trade. There, books are published, printed, and sold by many dealers. Merchants know Leipzig from the famous fairs there. At these fairs manufacturers display samples of their newest products for visiting buyers to see.

Silesia is located in the valley of the Oder River. This region, with its mines and good farming land, attracted people long, long ago. In early times Silesia was noted for its wool and flax. Water power was abundant, and the people began to make textiles. This industry has never lost its importance.

A large percentage of the people living in Silesia are farmers. Fine pine forests cover the hillsides. So raw materials are supplied

to factories from mines, farms, and forests. One of the best-known commercial and industrial centres of Silesia is Breslau. Products of the surrounding region are sent there, to be used in its factories or forwarded to other manufacturing centres.

**Chemical industries.** Germany is one of the leading countries in the manufacture of chemical products. Methods which scientists have followed in their laboratories have been adopted for use in factories.

Chemical plants have been built in many parts of Germany, and many different products are made in them. Some plants make chemicals which are used as a base for products made in other chemical plants.

The following example will help you see the importance of one chemical, ammonia. This chemical is usually made by combining nitrogen, which is obtained from the air, with hydrogen, which chemists may get from natural gas or gas made from coal or from very salty water. Ammonia may then be used in other chemical plants to make other chemical products, such as rayon, nylon, plastics, dyes, and fertilizer.

North-central Europe has many raw materials for making chemicals. They include potash, salt, and lignite taken from mines, tar obtained from coal, and alcohol made from potatoes. One of the leading centres for manufacturing chemicals is at Staszfurt. Near Staszfurt are the richest known potash beds in the world. The potash is mined and used for making fertilizer, many different chemicals, and medicines. Breslau and other cities in Silesia are also known for their chemical plants. What raw material might be used in these plants?

## Trade and Transportation

Some of the most important trade routes of Europe cross the North Plain. Even in the Middle Ages, traders carried their goods along trails that crossed this region. One of these old east-west trade routes crossed the

Wisla at the present site of Warsaw (Warszawa), the Elbe where Dresden is now located, and the Rhine River at the site of Cologne. Today, railroads follow the routes of these early roads.

North-south trade routes ran from the Baltic Sea southward to the Mediterranean and Black seas. Furs from Russia, amber from the Baltic coast, copper from the Mediterranean coastlands, and tin from England were moved on these routes. Where trade routes crossed, towns started to grow. Trading centres often begin at the edges of unlike regions. Many trading centres became large cities. Among these are Berlin and Leipzig. The physical-political map will show you that many large cities of the North Plain are important railroad centres. Even if there were no symbols to show you where these cities are, you would be able to locate them by following the red railroad lines. Where railroad lines cross each other you will always find a busy city. Notice how many railroad lines go through Berlin.

**A fine system of waterways.** Across the North Plain flow many navigable rivers. The most important are the Wisla, the Oder, the Elbe, the Weser, and the Rhine. Many tributaries from east and west flow into these main rivers, and shallow streams have been dredged to make them navigable. Most of the land on the North Plain is fairly level. Often only low divides separate the tributaries. It was not very difficult, therefore, for the people of the North Plain to connect most of their waterways by means of canals.

Thousands of miles of canals and navigable rivers stretch across the surface of the North Plain. These waterways provide a cheap means of transportation, and they carry an enormous amount of cargo. Where we depend upon freight trains for carrying bulky materials, the people of the North Plain depend to a great extent upon barges and small river steamers.

Hundreds of villages, towns, and cities are linked together by rivers and canals. The



physical-political map shows that boats can travel from the Wisla to the Oder, and from the Oder to the Elbe. Waterways also connect the Wcser with the Rhine, and the Rhine with the Scine. Thus, through a system of rivers and canals, goods can be shipped from many interior points of the North Plain to the Baltic Sea, to the North Sea, or to the English Channel.

**Roads and railroads.** While the waterways of Germany were being improved, a dense network of roads and railroads was being developed. Although much freight is moved on the inland waterways, even more is shipped on the railroads. Excellent passenger-train service not only connects all parts of Germany but extends to other parts of central Europe as well. Equipment is up to date, for Germany has experimented with new types of trains.

Both roads and railroads are better in the western part of the North Plain than in the eastern part. Surfaced roads, so common

**Barges and their cargo on the Elbe River, one of the many waterways crossing the North Plain.**

*U. S. Signal Corps Photo*



in Germany, are much farther apart in Poland. Besides surfaced country roads and highways from city to city, Germany has built many miles of superhighways. Such highways are four or six lanes wide, and equipment can be moved over them very rapidly. Passenger cars, buses, and trucks, however, are not as numerous as they are on the highways around Canadian cities.

**Sea gateways.** Among the important seaports on the continent are Hamburg, Bremen, Stettin, and Danzig. Study the physical-political map to see how each of these ports is located in respect to the important rivers of the North Plain. Which ports are on the North Sea? Which ports are on the Baltic? Find Kiel, situated at the east end of the Kiel Canal.

Hamburg is located on the right bank of the Elbe, about seventy-five miles from the North Sea. Look at the map on page 85 and you will see that Hamburg is one of the terminals in the North Atlantic trade route. It is also within easy reach of the Rhine-Ruhr region, which is the chief industrial centre of Germany. Wharves have been built along the river front for many miles. The map on the next page shows some of the artificial basins, or docks, which connect with the Elbe and provide more space for ships to tie up for loading and unloading. Along the basins are many large warehouses.

Hamburg is one of the great seaports of the world. It carries on a large transit trade, and one section of its harbor is set aside as a *free port*. There goods coming into the harbor can be transferred from one ship to another free of an import fee. And if the goods are not to be sold in Germany, they can be manufactured or proccssed free of duty or tax.

Hamburg is an industrial city as well as a great seaport. Rivers and canals connect the city with most parts of central Europe. Huge quantities of imported grain are ground in the flour mills of Hamburg. Beet sugar, chemicals, furniture, and many

kinds of machinery are made there. Modern ocean liners of the very largest size are built in Hamburg's shipyards.

Bremen has become a sea gateway to the Ruhr region. Ships sail from the North Sea forty-six miles up the Weser River to reach Bremen. Huge cargoes of imported goods, such as cotton and grain, are unloaded. Products from Bremen's many factories, shipyards, mills, and machine shops are hauled to the docks for export. Navigable waterways connect Bremen with the great iron and steel centres of the Ruhr Valley. Largely because of this close connection, Bremen is favorably located for the building of ships.

The Baltic ports are not so well situated for carrying on trade as are those on the North Sea. You have already learned that the Baltic is usually frozen during the winter. Ports on the Baltic are farther from the North Atlantic trade route. Turn to the map on pages 58-59 and trace the route ships may follow to reach the Baltic Sea from the North Sea. About how many hours would it take a freight ship, averaging twenty miles an hour, to go from Hamburg to Danzig? Estimate the time that is saved by ships that use the Kiel Canal. The port of Kiel grew up at the eastern end of this canal. What large port is near the western end?

Stettin and Danzig are the most important Baltic ports on the North Plain. Stettin is located at the mouth of the Oder River, which makes it a sea gateway to the industrial district of Silesia. The most important cargo carried on the Oder is coal. But the Oder River carries only about half as much cargo as is carried on the Elbe. This will help you account for the difference in importance of Stettin and Hamburg. Danzig is situated about three miles from the mouth of the Wisla. It serves as a sea gateway to the farming and manufacturing regions which lie to the east and the south.



A map of Hamburg and its surroundings.

**Berlin, the German capital.** Berlin began as a small village on a low, sandy plain. Find this city on the physical-political map. Its rapid growth started in 1870, when Berlin was made the capital and the centre of the transportation system of Germany. Both of these conditions brought much business to Berlin. It soon grew to be the largest industrial city in Europe, as well as a great commercial centre.

As in most cities, different sections became known for various markets and factories. For example, a section to the northeast was a big livestock market and meat-packing centre. One section of the city was noted for metal industries, another for printing and publishing, and another for manufacturing a great variety of small articles.

Having had a late and rapid growth, Berlin looks newer and more modern than most European cities. Because it is built on land that is almost level, its streets are wider and their pattern is more regular. It looks more like a Canadian city. Because of its location on an inland plain, suburbs have grown up all around the city, and the whole area is known as Greater Berlin.

**The capital of Poland.** Warsaw is located on the left bank of the Wisla River, as you face downstream. Find this city on your physical-political map. The plains all around the city are level and fertile, but Warsaw, itself, is situated on a hill or terrace that rises in steep slopes above the river.





Courtesy UNIO

The Wisla River winds its way past fields of rye and rolling hills on the outskirts of the city of Warsaw in Poland.

The city is old, one of the oldest cities in Poland, but it now includes some new sections. Several things indicate that Warsaw is in a transition area. An old Russian cathedral is surrounded by buildings that resemble those of Germany. For a long time the city was a marketing centre for the products raised in the surrounding countryside. In more recent years, manufacturing has been developed in Warsaw. Many different things, such as shoes, textiles, sugar and machinery, are made in the factories. All over Poland

complete dependence upon agriculture has changed to equal dependence upon both manufacturing and agriculture.

Your map shows that several tributaries flow into the Wisla River from the east and from the south. A canal along the northern edge of the Pinsk Marshes lengthens this system of waterways. Danzig is the port most convenient for use by Warsaw. For centuries Warsaw has been a trading centre. Cargo travels down the Wisla on its way to the Baltic Sea. Eastwest trade routes cross the city.

### CAN YOU TELL WHY?

Turn to the population map on pages 18-19 and find the most densely populated part of central Europe. You see that it lies along the southern edge of the North Plain, extending into the Central Uplands. You have learned that this is a manufacturing region with many large industrial cities.

You can have a class discussion about why this region at the edge of the highlands should have the most people and be the most highly industrialized. Do you think manufacturers have started factories in this part of the North Plain because of easy transportation, power resources, raw materials, or for some other reason?

## THE CENTRAL UPLAND REGION

Southward from the shores of the North and Baltic seas, the land of central Europe gradually slopes upward from low plains to highlands more than a thousand feet above sea level. This higher land between the North Plain and the Alps is known as the Central Upland region. Many rivers have cut valleys into it, and it is crossed here and there by low mountain ranges. The relief map shows

the areas included in the Central Upland region, and the physical-political map shows the altitude of its various parts.

### Farms and Forests

The sheltered valleys in the western part of the Central Uplands are noted for fruit and grain. In many places orchards and

vineyards cover the slopes, while tobacco and grain crops grow on the fertile lands along the rivers. Many of the river valleys in the Central Uplands are famous for their beauty as well as for their farm lands. Here quaint old towns have stood for centuries, and castles built in the Middle Ages look down from the hills over modern surroundings.

**Wooded slopes.** East of the Rhine Valley lies a mountainous region known as the Black Forest. Find this region on the physical-political map. Here the land is rugged, but the slopes are neither too steep nor too high for trees to grow. Thick, dark forests of firs gave the region its name. The forests are cared for according to government rules. Fire prevention is practised, only mature trees are cut, and no one may destroy a tree without planting another.

In this Black Forest region are many small lakes and winding streams, one of which is the beginning of the Danube River. All of these things attract visitors, and the region is famous as a vacation ground. It has become a favorite place for hiking. Simple overnight shelters are provided for vacation visitors,

who often spend weeks walking through this heavily forested region.

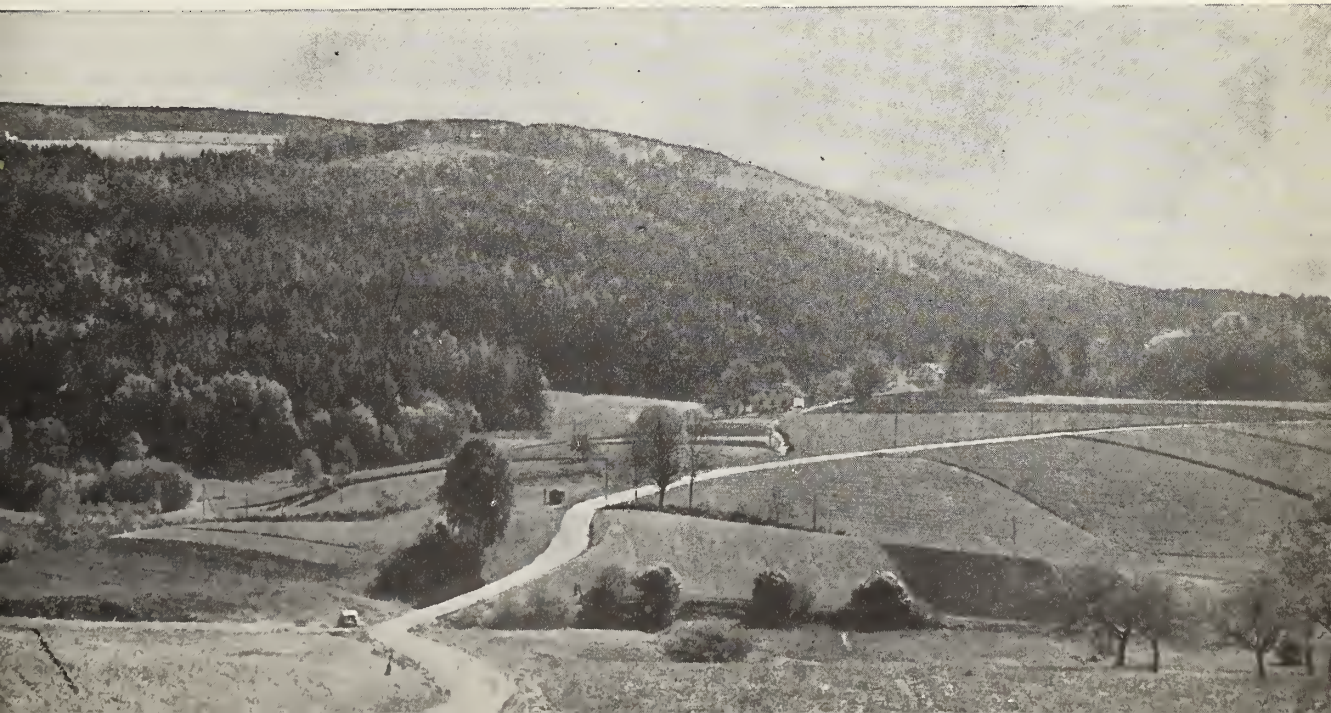
Many farmers, as well as lumbermen, live in the Black Forest. On some of the lower slopes are vineyards and orchards of apple, cherry, and plum trees. Higher up, where it is cooler, barley, rye, and potatoes are raised wherever level places can be found. Still higher up, the timber line is reached. Evergreen forests give way to bushes and grass, white with snow in winter but green in summer. Herds of dairy cattle are grazed on these high mountain pastures each summer.

Turn to the physical-political map to find the location of the Bohemian Forest. The Bohemian Forest is similar to the Black Forest in many ways.

**Farming on the Bohemian plateau.** East of the Bohemian Forest is a region called Bohemia. It is a plateau nearly surrounded by low ranges of mountains—the Bohemian Forest, the Ore Mountains, and the Sudetes. To the east it merges into a hilly region called Moravia. Both Bohemia and Moravia are parts of Czechoslovakia. You can see on the map that near the centre of Bohemia is the

The fruit trees, the well-kept, hilly farm lands, and the wooded slopes in this scene in Czechoslovakia are typical of the prosperous countrysides in the regions of Bohemia and Moravia.

*U. S. Signal Corps Photo*





wide valley of the Elbe. The river is a natural outlet for this fertile region. It flows northward between the Ore Mountains and the Sudetes. Dresden, Leipzig, and Chemnitz are all in a favorable position for trading with this productive region.

Intensive farming is carried on in Bohemia. The land is carefully cultivated and fertilized. Sugar beets are the most valuable crop, but they are rotated with other crops, which helps to keep the soil fertile. Look at the maps on pages 76, 77, 79, and 80 to see what these crops are. Dairying is important, and sheep are raised on lands too hilly to cultivate. Here and there in sheltered valleys among the fields and pastures are orchards and vineyards. In general, you may think of Bohemia as a region of progressive and prosperous farmers.

**Living in Slovakia.** East of Bohemia and Moravia is Slovakia, another part of Czechoslovakia. The physical-political map will show you that this is a region of highlands. Along the northern border, forested mountains with beautiful lakes and deep valleys separate Slovakia from Poland. The mountains are sparsely populated, but cattle and sheep are tended by shepherd boys who come from the lower valleys.

Slovakia faces the Danube rather than the North Plain. Broad river valleys lead to the Danube Valley, and Slovakia resembles the countries to the south and east more than it does Bohemia. For a long time the people of Slovakia had few opportunities to progress. Here you would see many old customs and primitive methods of agriculture. Roads are poor and there are few railroads. Many things are made in the homes, but there are few factories. Nevertheless, this region has charm because of the simple manner of living.

## Industry and Trade

The Central Uplands have rich coal and iron deposits in the eastern part, on the Bohemian plateau. The rest of the region

has small supplies of coal. There are few raw materials for factories outside of lumber for making wood products, sand for making glass, and kaolin for making pottery.

**Specialties of the Central Uplands.** In some parts of the Central Uplands the people make things which demand a vast amount of work and skill and use only small supplies of raw materials. Many of the workers make toys. Toymaking is especially important in and around Nürnberg, which you can find on the physical-political map. Many factories in this region make nothing but toys—dolls, animals, sleds, games, and hundreds of other playthings.

Toys are made in homes as well as in factories. In the uplands, winters are long and cold. The farmers have little to do. In olden times they spent much of their time indoors, carving wooden toys. At first they used only the materials they could get near their homes. Later they began to buy a variety of things to use, such as different kinds of wood, metal, and cloth.

The people of the region around Nürnberg now use their skill in making other articles. Their manufactures include music boxes, violins, watches, cuckoo clocks, and jewellery. Not far from Leipzig is the town of Jena. There skilled workmen specialize in making the kind of glass used in telescopes, microscopes, and cameras.

**Manufacturing in Bohemia.** The Bohemian plateau has large supplies of coal, and more coal can easily be brought from the mines of Moravia near by. Bohemia also has large supplies of lignite. Several tons of lignite are required to give as much heat as one ton of coal. Some of the lignite is converted into gasoline, and some is used in manufacturing fertilizer. Both of these industries are classed as chemical industries.

Bohemia has several raw materials that can be used in its factories. It has iron for steel, kaolin for china, sand for glass, and timber for making paper and wood products.

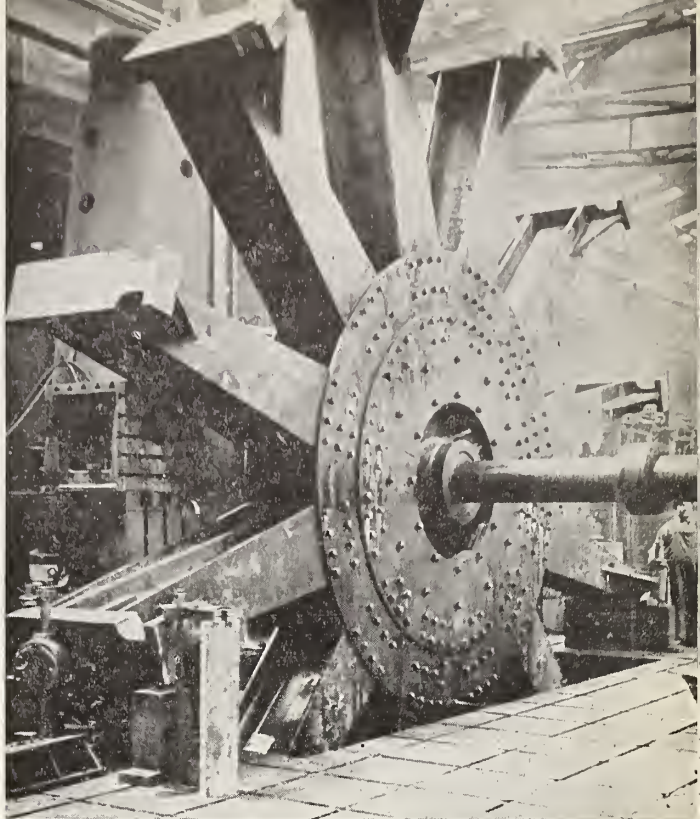
Bohemia also imports some raw materials for manufacture. Among these imported goods are hides and wool.

Lignite and iron are mined in the region that surrounds Prague (Praha) and Plzeň, and here the iron and steel industries of Czechoslovakia have their chief centre. Large quantities of sugar beets are raised in the surrounding farm lands, and the manufacture of beet sugar is very important in Prague. In fact, so much sugar is made that it is one of the chief exports of Czechoslovakia. Other factories make leather products, such as gloves and shoes. Still other factories make glassware, for which Bohemia has long been famous.

**Munich, at the foothills of the Alps.** At the southern edge of the Central Uplands is the city of Munich (München). It has long been noted for its collections of pictures, interesting museums, and large libraries. Some of its buildings are copies of famous buildings of other places. Munich became important also as a centre of manufacture and trade. Most of the products of its factories are similar to those of other cities of central Europe. But it manufactures a few outstanding products, such as scientific instruments used in the study of mathematics and astronomy.

Munich has been helped by its location north of Brenner Pass, a famous mountain pass through the Alps, which you can find on the physical-political map. Railroads connect Munich with the Mediterranean lands to the south as well as with the North Plain.

**Prague, the capital of Czechoslovakia.** The sites of many cities of Europe were chosen as places of safety. Prague started where a river curves between two hills. A castle was built on each of the hills to protect the settlement. The larger and more modern part of Prague, called New Town, is on the east side of the river. Old Town, on the west side, has many interesting historic relics, old gates, and towers. The trench that surrounded Old Town can still be seen.



*Kostich Photo Service*

At the Skoda Works in Plzeň heavy machinery is being made for a hydroelectric power plant.

West of Old Town is the residential district, while in New Town are the industrial and commercial parts of the city. Prague has a great many different kinds of industries. Among the important products are river barges and heavy machinery for farms, factories, and railways.

### CAN YOU SORT THEM?

The following list includes crops that are especially important in the Central Uplands and crops that are especially important in the North Plain. Sort them into two lists according to region. You will need to put some of the crops in both the Central Uplands and the North Plain.

|             |                |
|-------------|----------------|
| tobacco     | grapes         |
| oats        | rye            |
| sugar beets | potatoes       |
| barley      | orchard fruits |

Which of the Central Upland crops are grown on slopes and which are grown on more level land in valleys? Compare the valley crops with those grown on the North Plain.



# LIVING IN THE ALPINE REGION

Turn to the physical-political map and trace the Alps from the Mediterranean Sea to Hungary. You can see that one part of these high mountains extends north and south along the boundary between Italy and France. The east-west portion, in central Europe, is shared by Switzerland and Austria.

## The Land of the Swiss

The map below shows that Switzerland is divided into three regions. The high Alps cover more than half the country. The low Jura Mountains extend along the western part between Switzerland and France. Between these two mountainous areas lies a rolling plateau. It extends across the country in a general southwest-northeast direction from the French border to the Rhine Valley. Here the land is not mountainous, but it has hills and valleys, deep lakes, and marshes. The physical-political map shows that this region slopes toward the North Sea.

Although Switzerland is smaller than Nova Scotia, about as many people live there as in Ontario. The population map on this page shows how closely the densely populated section of Switzerland corresponds to the plateau region between the Alps and the Juras. Almost all the people live in the lower land. Even on the population map you can see where the valleys are.

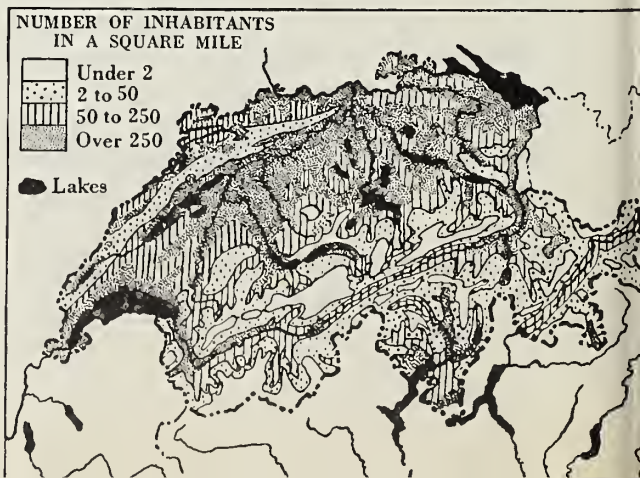
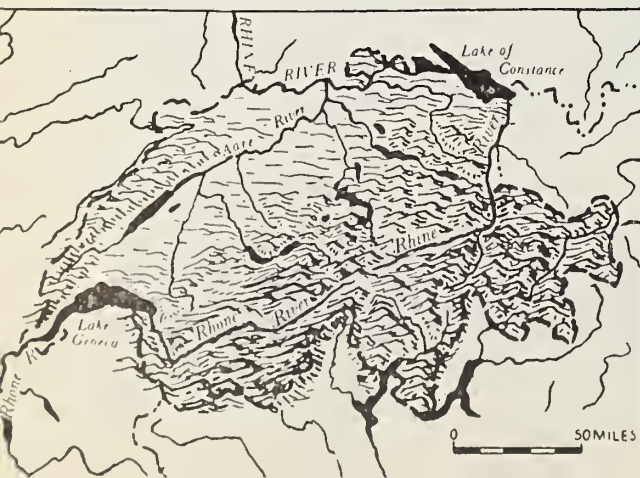
In the high mountain section of Switzerland, the valleys are the best places for villages and farms.

**The farms of Switzerland.** About one-fourth of Switzerland cannot be used because it is barren or covered with ice and snow. Of the remaining three-fourths, only a small part is suitable for agriculture. Still, a quarter of the population makes a living by farming. The farms are small or middle-sized, and every plot of land is tilled, no matter how small it is. None of the soil of Switzerland is very fertile, but, where it is warm enough, farmers raise grain. Orchards and vineyards extend up the mountain sides as high as they will grow.

Much more important than raising crops is stock raising. The high mountain lands that cannot be used for growing crops can be used to good advantage as pasture lands. Switzerland is famous for its fine breeds of cattle and depends upon them for much of its income. Cheese from Switzerland is sent to markets all over the world. Condensed milk, butter, and chocolate are also well-known Swiss products. Other food supplies are imported from foreign countries.

**Making a living by manufacturing.** There is no coal in Switzerland and there are few raw materials. But this does not

The map on the left shows the mountains and valleys of Switzerland, that on the right, the population.





*Philip Gendreau*

Raising livestock is one of the many ways the people of Switzerland make their living. The cattle have been taken to this high mountain pasture to graze during the summer months.

mean that only a little manufacturing is carried on. The Swiss buy raw materials from other countries and ship out finished products. Almost half the people of Switzerland make a living by manufacturing. Some of the work is done in homes, some in factories. As in Canada, many of the machines used are run by hydroelectric power.

Steel is imported and used for making various kinds of machinery, automobiles, watches, and scientific instruments. The textile industry is also important. Cotton, wool, and silk are imported and made into beautiful cloth, most of which is exported. Cloth sent to Switzerland from other countries is skilfully embroidered by Swiss women. Chemicals are manufactured, especially dyes and medicines.

Such things as watches, embroidery, silk ribbon, and milk chocolate illustrate the nature of Swiss industry. These articles require small amounts of raw materials, but a great deal of labor and skill. They are light and easily shipped, so transportation costs are not high. Yet, because they are made of good materials, and because they are made so skilfully, they bring good prices.

**Reaching the outside world.** There are three main highways of trade that lead from the Swiss homeland to the outside world. The Rhine River and the Rhine Valley provide a route to the North Sea, where Swiss imports and exports are handled at Rotterdam and Antwerp. You will remember that these great ports are sea gateways, not only to the Netherlands and Belgium, but to all parts of central Europe as well.

A second route is the railroad that passes through the St. Gotthard Tunnel in the Alps and continues southward across the plains of northern Italy to Genoa (Genova), a great Italian seaport. A third route goes through France by way of the Rhone River Valley to Lyon and on to the port of Marseille. Of these routes, the Rhine, with its valley, is the most important. Turn to the physical-political map and trace these three routes.

**Valuable scenery.** Scenery is a very valuable resource for the Swiss people. It has been estimated that the money brought into Switzerland by tourists each year exceeds that brought in by any other means. In





*Eisenstaedt from Piz*

Comfortable hotels and mountain skiing attract visitors to the vacation land in Switzerland.

summer and winter alike, Switzerland attracts thousands of tourists. It has become a land of hotels and excellent transportation, and caring for visitors supplies work for thousands of people. Some of the Swiss attend special schools where they are taught how to care for tourists. There they learn to speak the foreign languages they need to know. Some take courses in cooking and serving food and in managing hotels for visitors. Others are given special training so that they can act as guides for visitors who may wish to climb mountains.

## The Land of the Austrians

The physical-political map on pages 58-59 shows you that the Alps extend eastward from Switzerland over more than half of Austria. The Austrian Alps, however, are lower and broader than the Swiss Alps. As a result of their lower altitude and more gentle slopes, the Austrian Alps have more forests and are better for farming. Then, too, the Austrian Alps are richer in various kinds of mineral deposits.

The Austrian Alps, however, lack one advantage which the Swiss Alps have. They are not so attractive to tourists. They have fewer glaciers, fewer snow fields, and fewer lakes. And they are farther from the western countries. In some places, however, the Austrian Alps attract tourists because the mountains are very rugged and broken by wide gorges. One such place is the valley of the Inn River. Salzburg and Innsbruck, which you can find on your map, are favorite resort centres.

**The work of the people.** The Austrians are engaged in many kinds of work. More than half the people live in rural communities. They make their living by raising crops and by selling their surplus products in the cities, particularly in the capital city, Vienna (Wien). The part of Austria that is best for farming is in the Danube Valley, where the land is lower. There rye and potatoes are the leading crops. But the farmers cannot raise all the grain that is needed, and flour and cereals are among the imports. The mountain valleys are also used for growing crops, and farm lands extend up the slopes. How high crops can be raised depends upon the soil, the slope of the land, and the direction in which the slopes face. Slopes facing south receive more sunshine and crops can usually be planted higher than they can on slopes facing north.

Much land is suitable only for pastures. Most farmers keep cows, sheep, goats, and pigs. In the west, where farmers are influenced by the example given them by the Swiss, dairying is more important than it is in the east. Some cheese is exported, but most dairy products are used within Austria. Sheep supply coarse wool and some meat for the local markets, but the Austrians must import additional meat and textiles.

Very little of Austria is above the timber line. The Austrians have taken good care of their forests for a long time, and they have forest products to sell. Many wooden articles are made in homes and in factories. Pulp,

furniture, and other products made of wood are among the most important exports of the country today. In and around the city of Vienna, manufacturing is very important. The iron and steel industries produce a variety of products, from needles and screws to locomotives. The textile industry is also important, and many thousands of workers are employed in textile factories.

**Resources and transportation.** Austria has some coal, but not enough to supply the needs of its industries. The map on page 62 will show you that there are valuable iron deposits in the east. Austria also has lead, copper, and zinc mines. The swift mountain streams can provide enough hydroelectric power to run the railroads and factories of the country. But this resource has not as yet been very extensively developed.

The Danube River provides a navigable east-west waterway. It flows southeastward into a part of Europe where there is great need for manufactured articles of all kinds. The Danube leads to countries where most of the people are farmers. This farming area supplies many of the foods and raw materials needed by Austria. It also provides a market for surplus manufactured goods.

On the physical-political map you can see two important mountain passes which influenced the development of transportation in the Austrian Alps. The Brenner Pass in the west helped to locate the important route which extends from Munich to northern Italy. The Semmering Pass is used by the railroad which extends from Vienna southwestward, with branches to Italy and Yugoslavia.

**Vienna, the leading city of Austria.** Before World War I, Austria shared with Hungary the control of a great empire known as the Austro-Hungarian Empire.

Austria was the more powerful and important part of that empire, and Vienna was its capital. Vienna became a very busy industrial centre and a commercial gateway to all of southeastern Europe. The people of Vienna made it a city of beauty and a centre of art and learning. Then the Austro-Hungarian Empire was divided. The city of Vienna is now the capital of a small country instead of a large one. It is still a very important city, however.

After the empire was divided, Vienna had many troubles. It was too big for such a small country. However, Vienna will probably remain a large city because of its location. There are a number of reasons for this. In the first place, it is on the Danube River, which is navigable both above and below the city. In the second place, it can obtain products and resources from both the plains and the mountains. In the third place, it is situated at the southern end of an easy route which extends northward through the mountains to the Great Lowland Plain. In the fourth place, it has become a centre of European air routes.

**Notice the old castle overlooking this Austrian village. The valleys of the Austrian Alps make fine farm land.**

*Ewing Galloway*





## MIDDLE AND LOWER DANUBE REGIONS

The Danube is the second-longest river in Europe. Only the Volga in Russia is longer. You have learned that the Danube has its source in the wooded hills of the Black Forest. Turn to the physical-political map and trace the Danube across central Europe to the Black Sea. Its upper course is through the Central Uplands. Before reaching Vienna, its valley becomes wider and the current becomes slower.

Soon after leaving Vienna, the Danube cuts its valley between the Alps and the Carpathians. It then flows east and south across the Plains of Hungary. This part of its course is known as the middle Danube, and it is used more than any other section of the river for transportation.

After leaving the Plains of Hungary, the Danube rushes through a narrow mountain gorge two miles long. This gorge is known as the Iron Gate. Leaving the gorge, the river makes a broad curve northward through the Walachian Plain. Then it turns sharply eastward and builds its delta in the Black Sea. From the Iron Gate to the Black Sea the river is known as the lower Danube.

The map shows several long tributaries, but there are many more. Actually, more than three hundred tributaries bring water to the Danube. They bring many tons of mud, too. Part of this load is deposited in the valley, but much is deposited when the river enters the Black Sea.

The Danube is used in so many ways that there are often quarrels among the people living in its valley. Fishermen, ferrymen, city people, and boat companies all want their rights. The Danube is navigable for almost its entire length, and it is an important route of transportation for all the countries that border it. The weight of the cargo, or tonnage, is not so great as that of the Rhine, but there are almost as many barges. Most of the products shipped on the river require much space. Coal and manufactured goods

are shipped down the river, and oil, grain, lumber, and wool are sent upstream. As you read farther, you will see why these products make up most of the freight.

### The Middle Danube Region

Look again at the physical-political map and notice that the plains of the middle Danube are surrounded by mountains—the Alps on the west, the Carpathians on the north and east, and the mountains of Yugoslavia on the south. While Hungary occupies the heart of this lowland, you can see that other nations share it. Both Austria and Czechoslovakia have a small share, while Romania and Yugoslavia have a larger share.

**A land of farmers and herders.** The Plains of Hungary are made up of almost level stretches of land with fertile black soil.

The climate of the Plains of Hungary is continental, with cold winters and hot summers. It has a rather light rainfall, and in late summer the land is usually very dry. The light rainfall is due to the surrounding highlands, where the winds lose much of their moisture before they reach the low plains. Fortunately, most of the rain comes in the spring, when growing crops need it most. The light rainfall also helps to explain why the Plains of Hungary are natural grasslands. This grassland area was the home of the European cowboys who herded long-horned cattle and half-wild horses.

Large areas of the fertile plains have been cultivated. Crops of wheat, corn, tobacco, and sugar beets are important. Farms were once very large, and many farmers were dependent upon a landlord for everything they had. Since 1918 most of the large estates have been divided among the farmers who lived on them. The farms are small, and most of the work is done in a primitive way. Slowly changes are being made, however.



*Ewing Galloway*

The vast, level stretches of the Plains of Hungary are ideal for the raising of cattle and corn. Do these plains remind you of any part of Canada?

You can see on the map that not all of Hungary is a low plain. Where there is rolling or hilly land, the slopes are used for orchards or vineyards. Sheep are grazed in the foothills of the Carpathian Mountains. In the region west of the Danube summers are cooler because the land is higher, and winters are rather mild because cold winds are shut off by the mountains. Here are found some of the best farm lands in the country. Here, too, the farmers raise wheat and sugar beets and keep large numbers of hogs and cattle. Cattle of this region are raised chiefly for meat and hides. Sometimes farmers of Austria send their cattle to the plains of the middle Danube to be fattened.

Most of the Hungarian people are farmers or herdsmen. They live in little villages scattered here and there over the plains. The cities of Hungary are trading centres for the country around them.

Hungary has very few minerals or other raw materials for factories. It has large supplies of aluminum ore, called bauxite. But its supplies of coal are scanty, and most of the coal is lignite. Manufacturing is based chiefly on the use of farm products. There are flour mills, sugar refineries, and tobacco factories. Some iron ore is imported for use in a few iron and steel mills.

**Budapest, capital and largest city.** Find Budapest on the physical-political map. It was the capital and chief commercial centre of Hungary during the days of the Austro-Hungarian Empire, just as it is today.

Budapest has become a trading centre to which most Hungarian products are sent for manufacture or for distribution. Many of these products are shipped by way of the Danube. The city is located at a point where the river can be easily crossed. You can see on the physical-political map that railroads coming from almost all directions meet at Budapest. It is easy to build railroads on a plain, and Budapest has naturally become an important railroad centre. It is a gateway between two plains. Can you see them on the map?

Flour milling and the making of steel have long been the leading industries of Budapest. But slowly new industries are growing in importance. Among the new factories and plants to be seen in Budapest are those making textiles and chemicals.

## The Lower Danube Region

Turn to the physical-political map and find the lowland between the Transylvanian Alps and the Balkan Mountains. This lowland



is known as the Walachian Plain. Most of this region is in Romania. It produces many raw materials that are needed in other parts of Europe. Little manufacturing is carried on, however. There are few factories to help supply local markets.

**Regions of Romania.** Romania is divided into a number of regions. As you read about each one, find it on the physical-political map and try to picture the things and places you read about.

Transylvania is in the western part of Romania. You can see on the map that the western part of Transylvania is an extension of the Plains of Hungary. Farther east the land is hilly and thickly wooded, and the forests provide an abundance of timber. In the sheltered valleys, there are fruit orchards, grain fields, tobacco fields, and vineyards. Transylvania has many different minerals, too. There are salt mines, coal mines, iron mines, and oil wells.

You already know that the mountains which curve through Romania are called the Carpathian Mountains. The curve they form resembles a new moon. The southern part of the range, which extends east and west, is called the Transylvanian Alps. Here, as in Transylvania, are found thick forests. Turn to the map on pages 18-19 and notice the sparse population of the mountain areas.

South and east of the Transylvanian Alps lie the rich plains of the Danube. Fertile lowlands extend farther to the north, too. In this area you will find the best farm lands in Romania. Huge crops of corn and wheat are harvested, and millions of cattle and sheep graze in the pastures. Some of the cattle are used as work animals.

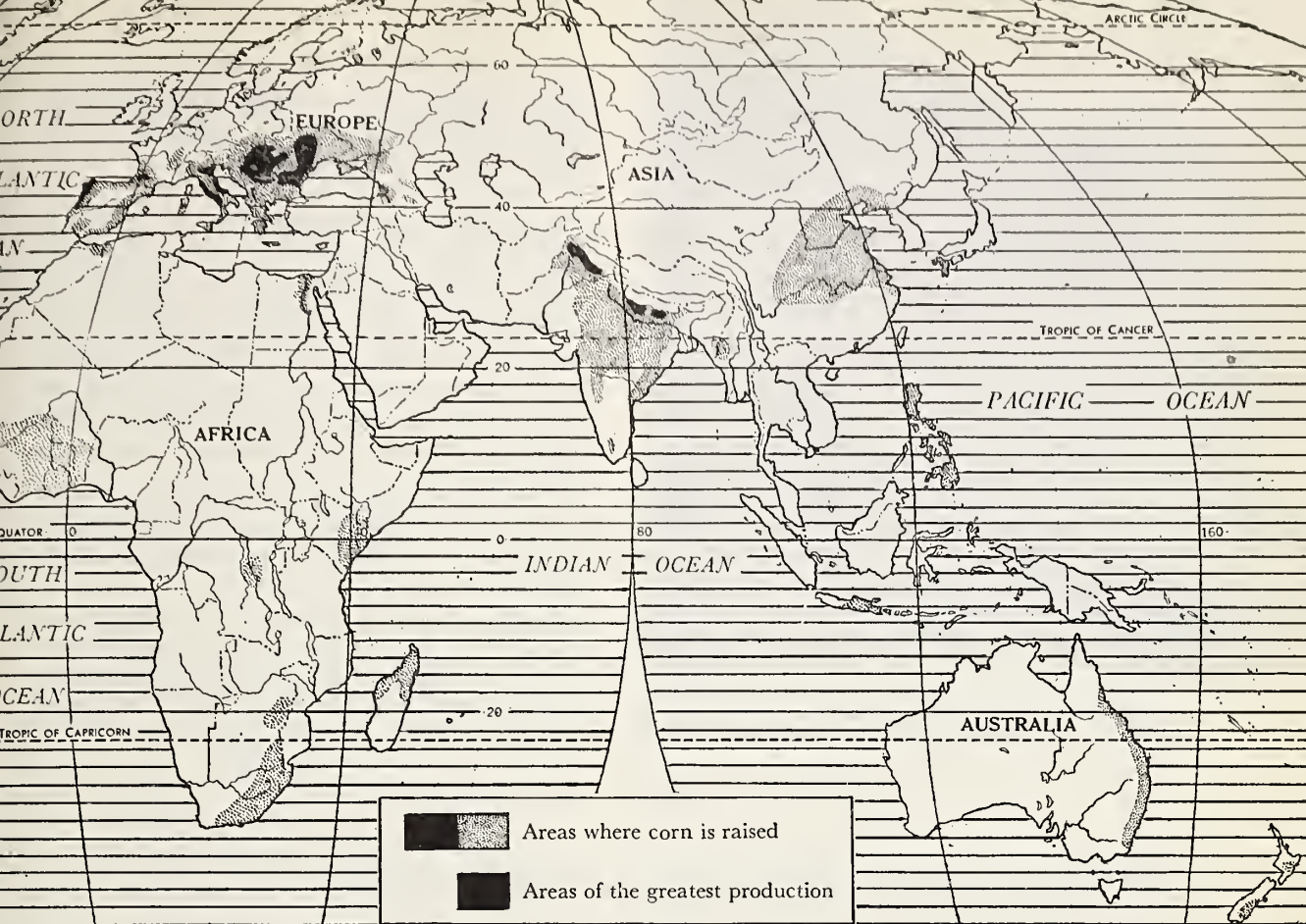
The region along the Black Sea, near the port of Constanța, has only a light rainfall. Because pastures are thin and dry, the region is used chiefly for raising sheep and goats, which supply milk as well as wool and meat. Toward the south the land is higher, and the rainfall is heavier. There the farmers can raise both corn and wheat.

**A land of grainfields.** The climate of Romania, like that of Hungary, is continental, for the winds that blow from the northeast or from the northwest must cross great stretches of land. The winters are snowy, cold, and windy. There are sudden changes of temperature, because all the eastern part of the country is exposed to winds from the vast plains that lie to the north and east. The summers are hot, but they are moderated slightly by winds that come from the Black Sea. Most parts of Romania have enough rain for raising grains. Rainfall varies in different parts of the country, but it is lightest in the eastern part. Study the physical-political map and see if you can explain why the rainfall is lightest there.

Corn is one of the most important crops in Romania. You can see on the map on the facing page that this region is one of the few places in Europe where corn is grown. Corn was brought from America to industrial western Europe. There the summers were too cool and the growing season was too short for it to ripen. Corn does well only in the rainiest parts of southern Europe. Why is so much of Canada's corn grown in the most southern part of Ontario?

The rich plains of the lower Danube make excellent farm lands. The soil is fertile, the growing season is long, and there is plenty of rain. The summers are fairly dry, with enough rain to keep the plants growing, and with plenty of sunshine to ripen the grain. Most of the rain comes in the spring. Natural conditions on the plains of the lower Danube are somewhat like those in the best grain-growing region of our own country.

**Romania's rich oil fields.** Little oil is produced in Europe. There are only a few countries in Europe where oil has been found. Next to Russia, Romania has the richest oil fields. Here the oil comes from oil fields to the east of the Transylvanian Alps. The wells are easily drilled and the oil is of excellent quality. These oil fields provide work for a great many people.



A map showing where corn is grown in lands overseas.

There is a big oil refinery at Ploesti, but most of the crude oil is shipped out of the country. It is moved by tankers, by tank cars, and through pipes to the Black Sea and Danube River ports. Romania has ranked fifth among the great oil-producing countries of the world.

**Industry and trade.** Romania has many kinds of minerals. Outside of oil, however, mineral production has been small, and there are only small supplies of iron and coal. Great forests supply large quantities of timber. Sheep provide wool and cattle supply hides. As yet, Romania does very little manufacturing. It depends upon imported manufactured goods, for the people of Romania are just beginning to manufacture products of their own.

The main Romanian exports are wheat and oil, and the main imports are manufactured goods. Most of the trade is carried on with other European countries. Some important trading centres have grown up near the mouth of the Danube and on the Black Sea.

There are no great industrial centres in Romania, but there are a few cities where some manufacturing is carried on. Braşov, near the central part, uses the raw materials supplied by the surrounding country. The near-by forests provide wood for furniture factories, paper mills, and sawmills. There are also tanneries and woollen mills.

Bucharest (Bucureşti) is the capital and the largest city. Located in the Walachian Plain, it has become an important railroad centre and carries on an extensive trade. It





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**Logs sliding into a river in Romania. Lumbering is one of the most important industries of this country.**

has few factories, however, outside of flour mills. Except for the business district and government buildings, it is a city of small houses surrounded by gardens.

### CAN YOU EXPLAIN?

The following statements came from the pages you have been reading. They are not easy to understand, but if you have been studying carefully, you should be able to tell exactly what they mean. Explain them as you would to a pupil in a lower grade, who does not know as much as you do about geography.

1. Vienna is situated at the southern end of an easy route which extends northward through the mountains to the Great Lowland Plain.

2. The cities of Hungary act chiefly as trading centres for the country around them.

3. The climate of Romania is continental, for the winds that blow from the northwest must cross great stretches of land.

## LIVING IN THE BALKAN REGION

Turn to the physical-political map and find that part of central Europe which lies south of the Danube River and between the Black and Adriatic seas. The countries that share this region are called Balkan countries. *Balkan* is a Turkish word meaning "wooded heights." This is a good name for these countries, because the region is chiefly a land of forested mountains.

You can see on the physical-political map that the Dinaric Alps extend from Austria southeast along the shores of the Adriatic Sea. The Balkan Mountains, which extend from the Black Sea westward, give the region its name. These mountains are not very tall. The Rhodope Mountains, the highest in the region, lie southwest of the Balkans. The largest areas of lowlands are a part of the middle and lower Danube region. These more densely populated parts of Bulgaria and Yugoslavia face the Danube and are similar to the lowlands of Hungary and Romania.

**A land of farmers.** Most of the people in Yugoslavia and Bulgaria make a living by farming. Their farms are usually small, and most of the farmers own the land they cultivate. Here, as in many parts of Europe, the people do not build farmhouses on their land. They prefer to live together in villages and go out from the villages each day to work on their farms. Nearly all the Balkan cities of today began as farm villages. Those which were in favorable locations for trading with the surrounding country gradually grew into towns and cities.

In some parts of the Balkans, farming is still backward. In the mountains the farms are small, and because of poor transportation it is difficult for the farmers to market anything they have to sell. The people have very little money to spend for machinery. As a result, old-fashioned ways of farming are used in many places. One may still see Balkan farmers plowing with wooden plows,

sowing grain by hand, and harvesting it with the sickle and scythe. The best farm lands in the Balkans are in the valleys of the Danube and its tributaries. The farmers of the plains use more modern machinery than do the farmers of the mountains. They have larger fields of corn, wheat, and sugar beets.

Now turn to the physical-political map and find the valley of the Mariça River between the Balkan and Rhodope mountains in Bulgaria. There the winters are mild, because the mountains shelter the valley from cold winds. The farmers raise grain, fruit, cotton, and tobacco. The climate, like that of Mediterranean countries, favors the growth of mulberry trees. As a result, many people raise silkworms, and silk production is important. On the sunny southern slopes of the Balkan Mountains, in the valley of a small branch of the Mariça, farmers cultivate roses. They use the rose blossoms for making a very expensive and famous perfume called attar of roses.

Look at the physical-political map and notice how much of the Balkan region is mountainous. This part of the region has a variety of minerals, but little use has been made of them. Eastern slopes of the mountains are thickly covered with forests of oak and beech trees. Large quantities of lumber are exported, especially to the unforested lands of western Europe. The people gather

beechnuts, press out the oil, and use it instead of butter. The mountain farmers in the Balkans, like mountain farmers in nearly all parts of the world, keep large numbers of farm animals. Pigs are fattened on acorns and beechnuts. Mountain pastures are used for cattle, sheep, and goats. You can see on the map on page 71 that many sheep are raised on these scanty pastures.

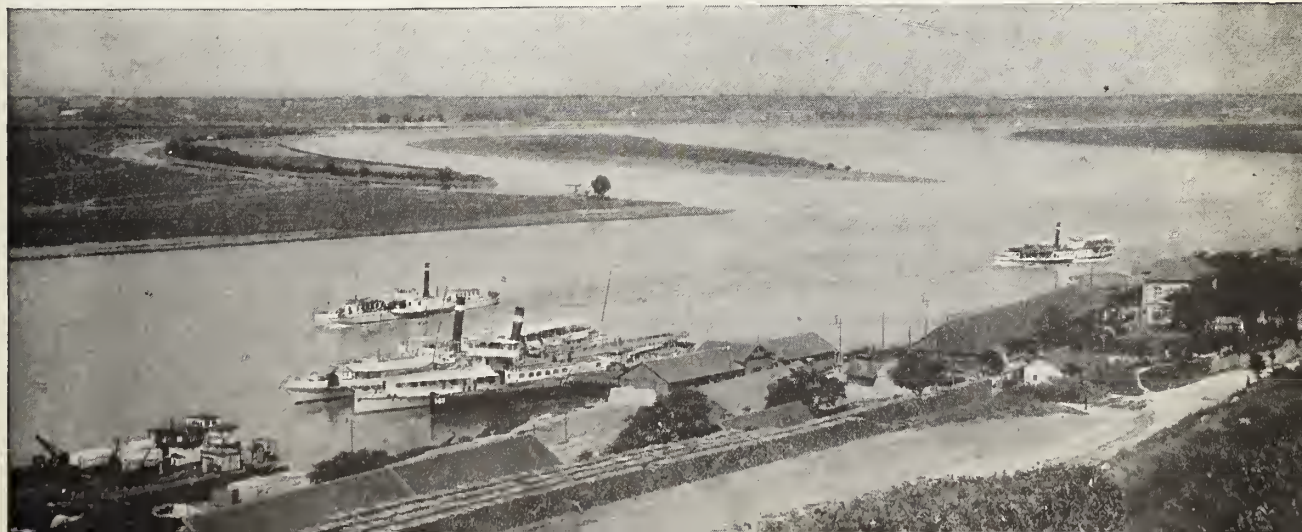
In the little mountain valleys, farmers raise wheat, corn, fruit, tobacco, and vegetables. In central and southern Yugoslavia the valleys are famous for their orchards of plum trees. Each year millions of pounds of plums are dried and exported as prunes.

Gradually the people of the Balkan region are adopting more modern ways of farming and living. There are factories, too, although most of the people are still farmers. Modern trains and airplanes connect the larger cities of the Balkans with cities in other parts of the world.

**Balkan capitals.** Turn to the physical-political map and find the capitals of Yugoslavia and Bulgaria. Belgrade (Beograd) is located at the centre of land and water routes. It is on the Danube at a place where that river is joined by the Sava. Belgrade is the trading centre of the rich plains that surround it. High mountains make it difficult, however, for the people to reach the Adriatic coast.

Where the Danube and Sava rivers meet at the edge of the city of Belgrade, Yugoslavia. All countries that border the busy shores of the Danube use the river to transport their products to and from the Black Sea.

*Burton Holmes from Ewing Galloway*





Belgrade is also the northern gateway to a famous old highway, the Morava-Vardar Valley. Turn to the physical-political map and find the Morava and Vardar rivers. In what direction does each of these rivers flow? Into what waters does each empty? The valleys of these two rivers form a lowland route extending through the Balkan highlands. For hundreds of years the Morava-Vardar Valley has been a highway of trade and travel. Today a railroad follows it.

Look again at the map and trace the railroad through this low route. Notice that it divides at the town of Niš in the Morava Valley. One line follows the Vardar Valley southward to the Aegean Sea. Another line

follows the Mariça Valley southeastward to Turkey and to Asia. On the latter line is located Bulgaria's capital, Sofia (Sofija).

You can see that this city is located between the Balkan and Rhodope mountains. What does the physical-political map show about the altitude of Sofia? How does its altitude compare with that of Belgrade? Sofia has connections with two Black Sea ports. It can easily ship goods to Turkey and to countries farther east. And it can also send its goods to central European markets. Most of the things manufactured in Belgrade and Sofia are needed for use at home. Only products such as attar of roses, raw silk, and dried fruits are exported.

## THE GEOGRAPHY WORKSHOP

You have learned that central Europe is a transition region. If you were to travel over this great stretch of country from west to east, you would find that ways of living change. Keep this in mind as you carry out the suggestions that follow.

### I. THE WORLD IN YOUR COMMUNITY

If you were a radio operator about to beam a broadcast to Romania, in which direction would you point the beam? In what countries you have already studied might the broadcast be picked up?

By great-circle measurement, about how far from your home is the nearest place in central Europe? About how far away is the most distant place in central Europe?

Is any part of central Europe directly east of your home? If so, find a central European region that is in about the same latitude as your own community. How does it compare with your region in rainfall, growing season, vegetation, and population?

Central Europe has a great variety of regions. Climate changes, not only from north to south, but from west to east. There are high mountains, low mountains, hills, plateaus, plains, and wide valleys. Select a region which reminds you in some way of the region around your own community. Then

make a special study of the region you have chosen. Find out all you can about it and compare it with your community. How closely does it resemble your region in altitude, climate, surface, soil, and vegetation? Does it have the same natural resources? Do people use them in the same way? Which is more highly industrialized? Are the industries the same? Which do you think would be more interesting to a stranger who did not know either one?

#### *People and products*

You can probably find people in your community who can tell you about the western part of central Europe. Many war veterans saw parts of Germany. Germany has very beautiful scenery. Ask them to tell you about it. A few saw Czechoslovakia. Not many saw the other countries of central Europe. In most communities there are people who have travelled as tourists to Germany, Switzerland, and perhaps to Czechoslovakia and Austria. Austria has long been famous for its fine hospitals and medical schools. Many Canadian doctors have studied there.

You will find much the same situation when you look for people whose ancestors came from central Europe. There are many Germans in the Prairie Provinces, especially in Saskatchewan. In some parts of Ontario you will find German settlements. Almost

anywhere in Canada you will find a few Germans. You may or may not find people whose ancestors came from other countries of central Europe.

In recent years many new Canadians have come to us from central and other parts of Europe. Have you any of these people in your community? Is your community doing anything to help them? Can your class do anything to help make them happier and better Canadians?

There are a few other things you need to keep in mind as you look for people who came from central European countries. If a person tells you he is a Czech, he does not mean that he came from just anywhere in Czechoslovakia. He means that he is a Bohemian. If he came from eastern Czechoslovakia, he will say he is a Slovak. Probably no one will ever say he is a Yugoslavian. He will say he is a Serb, a Montenegrin, a Bosnian, a Slovene, or a Croat. Both Czechoslovakia and Yugoslavia were formed after the First World War by the union of several areas whose people thought of themselves as different nationalities.

You cannot expect to find many articles made in central Europe. Bohemian glass and embroidered linens from Switzerland are fairly common. Watches, cheese, and chocolate are also imported from Switzerland. You may find cameras, scientific instruments, clocks, toys, and musical instruments from Germany. From the other countries of central Europe, Canadians import very little.

Select an industry in your community that is also important in central Europe. Your History group should learn all it can about the history of the industry down through the ages. The Natural Environment group might study the resources and other factors that must be present before the industry can be carried on. The Social Environment group can use reference books as well as the index of this text to discover in what parts of the world this industry is an important one. It should note how the industry affects the daily lives of the people in your community.

Then plan to see the industry in action. Make arrangements to visit the industry at a time convenient to your hosts. During the visit, stay close to your guide and listen carefully. When you ask a question, make certain that the entire class can hear you. Be attentive, be courteous, and be certain to thank your guide.

After the trip the members of the class might report on the different things observed on the visit. Discuss how this study has helped you to understand the importance of the industry in central Europe.

### *Customs and costumes*

Long ago, people of different nationalities differed more in ways of living than they do today. A nationality had, not only its own language, but its own costume, or style of dress. It had its own ways of preparing food, its own kinds of houses and communities, and its own ways of living. All these things made up the *customs* of the people. Each nationality usually had its own stories, songs, and dances. These are called folk tales, folk songs, and folk dances.

In western Europe and in the Scandinavian countries, you found customs and costumes very much like those of your own country. Perhaps people still know the old songs and stories. Perhaps on holidays they dress up in the old-fashioned costumes and perform the old dances, but these things are not part of their everyday living. Modern industrial civilization has made people more alike wherever it has reached them.

Eastward across central Europe, industrial civilization has had less influence. In the large cities most people live and dress much as do people in western Europe. In the villages many old customs and costumes exist.

Your class might like to prepare a program of the folk songs and folk dances that belong to one of the nationalities of central Europe. Perhaps you could make a play from one of the folk tales of the same nationality and give it as part of the program. The costumes and scenery should be correct for the nationality you have chosen.

### *People you should know*

All of the following people were born in the countries of central Europe: Ludwig van Beethoven, Joseph Conrad, Marie Curie, Anton Dvořák, Jakob Grimm, Thaddeus Kosciuszko, Franz Liszt, Ignace Jan Paderewski, Casimir Pulaski, Wilhelm Konrad Röntgen, Franz Schubert, Kate Seredy, Charles Proteus Steinmetz, Johann Strauss, Nicola Tesla. These are all people we should know about. We should read their books, listen to their music, benefit by their discoveries and inventions, or honor them for other contributions they have made to the world.



Distribute the names among the members of your class for study. Find out who each person is and what he has done. Listen to the music of the musicians and read something written by the writers. Find out how you have benefited from the work of the inventors and the discoveries of the scientists.

## II. NEWS FROM CENTRAL EUROPE

Some of the countries of central Europe are small and do not have a variety of resources. As you discuss current events in these countries, pay especial attention to news items indicating that these countries exchange raw materials and products.

## III. WHAT YOU CAN READ FROM PICTURES

The picture below was taken in Bulgaria. If you could read everything in the picture, you would recognize this for yourself. The people do not follow western styles of dress. If you were an expert on European costumes, you would have recognized them as Bulgarians from their clothes. How do their clothes differ from the clothing of people in industrial western Europe?

What is the round opening in the ground? How do you know?

What evidence do you see that the land is less intensively cultivated than in most of industrial western Europe?

What evidences do you see that this picture was not taken in a highly industrialized region? That is a hard question, but you can answer it if you study the picture carefully.

*Ewing Galloway*



## IV. PICTURES FROM CENTRAL EUROPE

Imagine you have five pictures to sort.

1. Coal barges on a river.
2. A group of oil wells.
3. A view that includes many bare, snow-capped mountains.
4. A man making toys in his own home.
5. A large steel mill.

The pictures were taken either in central Europe or in industrial western Europe. They are hard to sort because almost anything found in western Europe could be found somewhere in central Europe. The best you can do is to arrange the pictures in the following order: one that was almost certainly taken in central Europe, two that were probably taken in central Europe, and two that are as likely to have been taken in one area as the other.

## V. REGIONS OF CENTRAL EUROPE

On an outline map of Europe, draw a heavy black line between the area you studied as industrial western Europe and the area you studied as central Europe. Color the Great Lowland Plain as far as you have studied it. Then color the Alpine region. The natural environment of these two regions is more important than the social environment. Now color a region of which the opposite is true. This region has more than 250 people to the square mile. Where does this region overlap either of the others? Of all the natural regions of central Europe, which has the largest areas of dense population? Does any part of this region extend into industrial western Europe?

As you see from your map, the large central European regions you have studied extend into this area from industrial western Europe. Choose one of these regions for special study. Prepare a talk on your chosen region, explaining (a) how it differs from other regions in central Europe, (b) how it changes from west to east, and (c) the kind of work that supports most of the people.

You can find the most highly industrialized part of central Europe by a careful study of the population map on pages 18-19. Explain why this statement is true. Which countries of central Europe share in the industrial region? Which of these countries do not have a seacoast? Why are free ports important to countries that do not have a seacoast?



## *Living in Mediterranean Europe*

### WARMER AND DRIER LANDS

South of industrial western Europe and central Europe lies Mediterranean Europe. By looking at the map on this page, you can see that Mediterranean Europe is separated from these other regions by mountain walls, and that it borders the Mediterranean Sea. On pages 38–41 you read about the ancient peoples who lived in Mediterranean lands. It was to this region that civilization spread from Egypt and southwestern Asia. This was the home of the ancient Greeks and Romans.

**Mediterranean climate.** Scattered over the world are lands which are said to have a Mediterranean type of climate. Southern

California is one of these lands. Such places are bright and sunny. They receive most of their rain in winter, but even then there are many bright, clear days with blue skies. The winter temperatures are mild, although there are occasional frosts. Snow rarely falls except on the highlands. Mediterranean summers would remind you of desert weather. The days are hot, but the nights are pleasantly cool. It seldom rains, and, unless there is irrigation, the landscape that was fresh and green in winter becomes dusty and brown under the hot summer sun.

Wherever the Mediterranean type of climate is found, farmers can raise much the



same kinds of crops. Their type of farming is often called *subtropical*, or nearly tropical, agriculture. Subtropical products include olives, citrus fruits, grapes, vegetables, and winter wheat. Because of its mild winters, Mediterranean Europe, like southern California, is able to send fruits and vegetables to densely populated regions where winters are longer and colder.

**The importance of the sea.** The Mediterranean Sea is in a large, irregularly shaped basin which extends eastward from the Atlantic for more than two thousand miles. The Mediterranean is a warm sea, for its waters are heated during the long, hot summers. Winters are cool, but short. Because the Mediterranean is almost entirely enclosed by land, it does not receive cold currents from polar regions, and so remains warm all the year. What difference does this make between the temperatures of countries along the Mediterranean and those along the Atlantic?

Narrow passages connect the Mediterranean Sea with other bodies of water. These passages are important in ocean trade. Many ships use a trade route that goes through the Mediterranean, and seaports have developed along this route. These ports ship out cargoes which are quite different from those

handled in the ports we have already studied. These exports are from warmer lands.

**Study guides.** In this unit you will learn about the region of Europe which borders the Mediterranean Sea. There are many similarities in the countries of this region, but there are also differences. As you read, look for answers to the following questions.

1. How does the climate of Mediterranean Europe differ from the climate of industrial western Europe? How does it differ from that of the middle and lower Danube Valley? (I, III)

2. Why is this region less suited to farming than western and central Europe? (V)

3. What are tree crops? Why are they found in a large part of Mediterranean Europe? (V)

4. How do the people of the highlands make a living? How does this differ from the method of making a living in Scandinavian Europe? (V)

5. Why is the Po Valley the most densely populated part of Italy? (II)

6. What areas of Mediterranean Europe are most important for manufacturing? What advantages does each of these areas have for manufacturing? (II)

7. What are the chief imports and exports of Mediterranean Europe? Why is its trade less than that of other regions of Europe that you have studied? (II, IV)

## WHAT WE CAN READ FROM MAPS

### LOCATING

#### MEDITERRANEAN EUROPE

Mediterranean Europe is made up of the Iberian and Italian peninsulas, the Rhone Valley and the southern coast of France, Greece, Albania, and the coastal lands of Yugoslavia. Turn to the physical-political map on pages 166-167 and tell what two countries share the Iberian Peninsula. Find the peninsulas occupied by Italy and Greece.

#### THE MEDITERRANEAN SEA

1. Turn to the map on pages 10-11. Can you find what part of Canada is in the same

latitude as the northern part of the Mediterranean Sea? You can find the answer to this question by laying a ruler straight across the map.

2. On the world map you can see that the Mediterranean Sea lies between Europe and Africa. In what direction from the Mediterranean Sea is the Red Sea? The Red Sea is a part of the Mediterranean route which connects the Atlantic Ocean and the Indian Ocean. What canal connects the Red Sea and the Mediterranean Sea?

3. Now turn to the physical-political map on pages 166-167 to find the name of the strait which connects the Atlantic Ocean and the Mediterranean Sea. About how wide



is this strait? A high point of land known as the Rock of Gibraltar overlooks the strait.

4. In what direction from the Mediterranean Sea is the Black Sea? Locate and name the seas and straits through which a ship would go to reach the Black Sea.

5. Find the Adriatic Sea on the physical-political map. What countries border the Adriatic?

6. Use the map on page 85 to find the routes that ships can follow in going from Liverpool to Calcutta. How much of the distance is saved by ships using the Mediterranean route? France has colonies in North Africa and in Asia. What valley and what port help France to make use of the Mediterranean route?

### THE LAND AND ITS PEOPLES

1. Most of Mediterranean Europe is made up of highlands. The population map on pages 18–19 shows that the density of population in Mediterranean Europe varies from place to place. Where do most of the people live? Perhaps you have discovered that two

of the most densely populated areas are in river valleys. What are the names of the rivers?

2. The Iberian Peninsula is largely a plateau. What does the physical-political map show about its altitude? Rainfall on a plateau is usually light because winds blowing up the slopes of the plateau cool enough to lose their moisture. Many plateaus are rough; the soils are often thin and stony. Knowing this, would you expect the Iberian Peninsula to be densely populated? Check your answer on the map on pages 18–19.

The Pyrenees Mountains separate Spain from France. Find other mountain ranges on the Iberian Peninsula.

3. Look at the physical-political map and find the place in Switzerland where the Rhone River rises. Find the lake into which it flows. From this lake it flows to the southwest toward Lyon, where it makes a big bend to the south. At Lyon, a large tributary flowing from the north joins the Rhone River. What is its name? This river gives the Rhone Valley easy connections with northern France.

**Much land in Mediterranean countries is used for grazing sheep. Why not for farming or cattle ranching?**

*Burton Holmes from Ewing Galloway*













4. What mountains extend southeastward through the Italian Peninsula? Mount Vesuvius is a famous volcano in Italy. Find it on the map. What volcano do you find on the island of Sicily? Volcanoes sometimes pour out great masses of melted rock called *lava*. Some throw out dust, ashes, and cinders. These may cover the earth for many miles around. When volcanic rock materials decay, they form a very rich soil. Fertile volcanic soil attracted people to the regions around the two volcanoes referred to above.

5. Is most of the land of Greece high or low? Where is the largest area of lowland?

6. How does the coast of Yugoslavia differ from the coast of Italy? Notice that a part of the coast of Yugoslavia is called Dalmatia. In what way does Dalmatia differ from Albania?

7. Highlands are likely to be sparsely settled on account of thin soils, a short growing season, and difficult transportation. Give examples of sparsely settled highlands in Mediterranean Europe.

#### CLIMATE AND VEGETATION

1. Southern Italy is a good example of a region that has a Mediterranean climate.

Now turn to the rainfall map on pages 12–13. How much rain does southern Italy have?

2. The Po Valley of northern Italy has a mild winter because high mountains shelter it from cold north winds. On the map find what mountains are north of this valley. Mediterranean Europe has other river valleys that are sheltered from cold winds by mountains.

3. The average July temperature in most of Mediterranean Europe is just a little warmer than that in Southern Ontario. Would you expect the growing season of Mediterranean Europe to be long or short? How does it compare with that of Scandinavia? with that of central Europe? Check your answers on the map on pages 14–15.

4. Turn to the map on pages 16–17 and notice that Mediterranean Europe is largely a region of *dry forests*. The trees and shrubs of dry forests are able to live through the long, dry summers with only a little moisture.

Olive, fig, and almond trees are suited to Mediterranean climate. On the higher, cooler mountain slopes with more rainfall there are various broadleaf forest trees. These vegetation belts of the mountains do not show on the map. Only scanty pastures are found in most of the highlands.

Four families are threshing grain in a village near Madrid, Spain. Can you explain how the work is done?

Burton Holmes from Ewing Galloway





# USING NATURAL RESOURCES

Mediterranean Europe, as you learned, is a region where there are more highlands than lowlands, and where the winters are mild and moist and the summers hot and dry. There are few natural resources in this region. The mountains have few minerals and scanty forests. Only a small part of the people can make a living through mining or manufacturing. Most of them depend upon the land. These conditions have greatly influenced the development of industry and trade.

## Making Use of the Land

The best farm lands of Mediterranean Europe are found in the river valleys and along the seacoast. The growing season is long, but it is also dry. In such hot, sunny lands, water dries up quickly. Most crops need more than 20 inches of rainfall a year. By looking at the rainfall map on pages 12–13, you can see that most of Mediterranean Europe has an annual rainfall of 20 to 40

inches. Some parts, however, have less than 20 inches. The farmers need to irrigate their land or else cultivate plants that can mature in dry weather.

Because level land is scarce, many steep slopes are *terraced*. Terraces provide more level land and prevent soil from washing away. The picture on this page shows how terraces are made by building walls on the hillsides. These walls are usually made of stone, and they may be as much as six feet high. Soil collects behind the walls, and in many cases farmers bring up more soil from the valleys. On very steep slopes, farmers may have for cultivation only fifteen-foot strips of level land behind each wall.

In spite of these drawbacks, Mediterranean Europe is an agricultural region. More than half of the people are farmers.

**Olives and grapes.** Mediterranean Europe is a land of sunshine. In summer the grass turns brown and the countryside is dotted

**Terraces reduce soil erosion on steep mountain slopes, making it possible to raise grain and other crops.**

*Burton Holmes from Ewing Galloway*





with the dull green of trees, bushes, and vines. In this region some trees are grown for the crops they produce. The olive tree lives through rainless summers even without irrigation. Do you know that trees give off water through their leaves? They do. But the olive tree gives off less than most trees. Its small, dull-green leaves are thick, and they are covered with tiny hairs which help save the moisture brought from deep down in the earth by long, widespread roots. Since little water escapes from the tree, it can live in regions of scanty rainfall. But it cannot

stand much frost. This will help you understand why large crops of olives are grown in mild Mediterranean lands with less than 20 inches of rain a year.

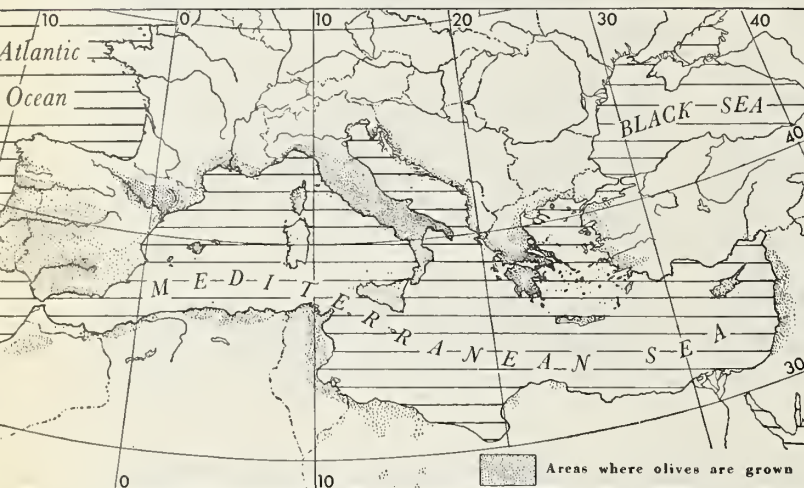
The olive is especially important in Mediterranean Europe because it supplies the oil which the people need in their diet. Nearly every farm has a press for crushing olives and taking out the oil. In North America, fats and oils are obtained from various sources, such as meat and dairy products, soybeans, and cotton seeds. The people of Mediterranean Europe have very little butter, cream,

or lard. The dry pastures are not good for grazing dairy cows, and there is little feed for pigs.

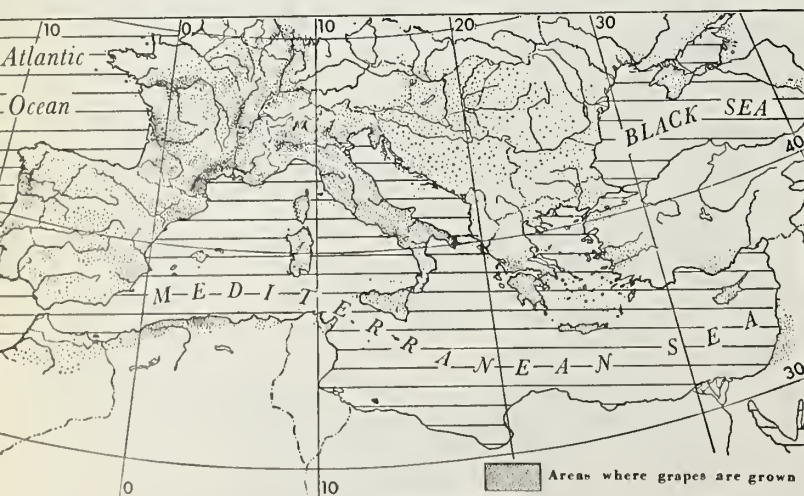
Although the olive tree grows wild in some parts of Mediterranean Europe, careful cultivation is needed to produce olives with a high content of oil. The olive tree grows slowly. It bears little fruit until it is about twenty years old. Then it may continue to bear for more than a hundred years. A good farmer fertilizes the ground and carefully trims his olive trees to make them yield more fruit.

The upper map on this page shows the principal olive-growing areas in the Mediterranean lands. Locate the most important olive-producing regions of Europe. Do many or few olives grow in northern Italy?

The grape is another important crop of Mediterranean Europe. The grapevine can live through the dry summer because it has long roots. Grapes have been grown in Mediterranean Europe for a long time. The Romans found that the vine would do well even on the steep and stony hill-sides of the Italian peninsula. Grape producing spread from Rome to all the Mediterranean



A map showing where olives are grown in the Mediterranean area.



Map showing where grapes are grown in Mediterranean lands.

coastal lands. This region became the leading grape-producing area of the world.

Look at the map on page 170 to see where grapes are raised in Mediterranean Europe. Which of the Mediterranean peninsulas grow grapes? Notice that grapes are found in abundance in northern Italy, while olives are not produced in that area. Remember that olive trees cannot stand cold weather.

Greece is famous for vineyards that produce small, seedless grapes called currants. Currants are dried and are then shipped to many parts of the world. Perhaps you have eaten currants in cakes or puddings. Most of the currant vineyards are on the slopes that border the Gulf of Corinth. Find this gulf on the physical-political map.

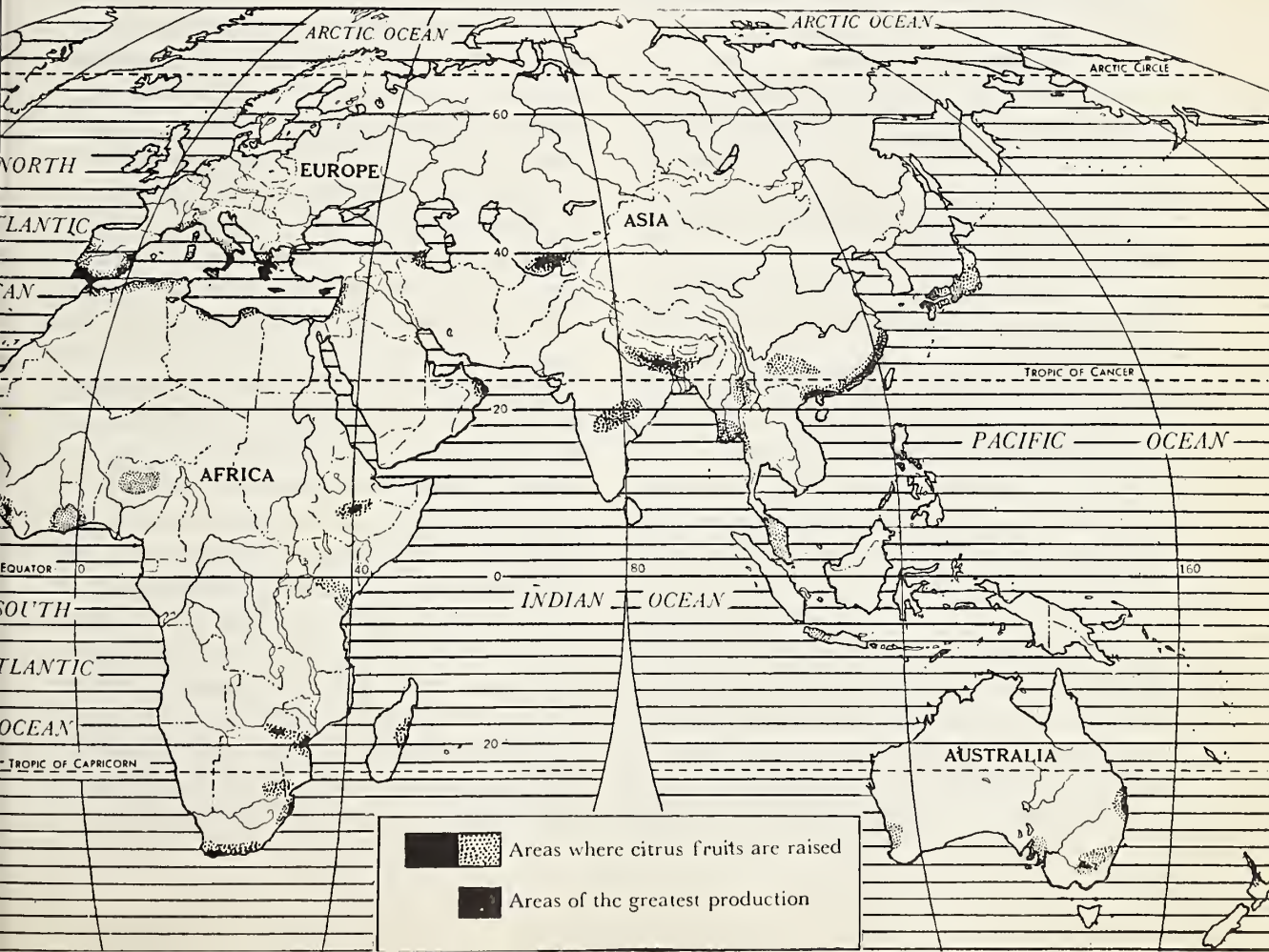
**Figs and almonds.** Two other tree crops of Mediterranean lands are figs and almonds.

They can be cultivated in places that are too frosty for olives and citrus fruits. The most productive fig orchards are found near the Mediterranean shores of Asia, but figs are also grown in Mediterranean Europe. Fine figs are produced in Greece on both the mainland and the Aegean islands.

We usually think of the almond as a nut, but it is actually a relative of the peach. The trunk, twigs, and blossoms of the almond tree are much like those of the peach tree, and its fruit resembles small green peaches. We eat the pulp of the peach and throw away the stone; we throw away the pulp of the almond and eat the stone or kernel. Almonds are exported from Spain and Italy.

**Citrus fruits.** Look at the map below to see where citrus fruits are grown in Mediterranean Europe. Citrus fruits, as you may

A map showing where citrus fruits are grown in lands overseas.





know, include lemons, grapefruits, and limes, as well as oranges. They grow chiefly on sunny slopes or in sheltered places in the warmer areas of Mediterranean Europe. In some parts of Italy the growers protect the trees from frost by making shelters covered with trimmings from grapevines or branches from trees and bushes.

The most productive citrus-fruit areas are found on the coastal lands of eastern Spain. There orange orchards face the warm sea and are protected from cold winds by the high plateau. Oranges and lemons grow well on the island of Sicily, where the temperature averages above 50° even in January.

**Grain crops.** Turn to the map on page 76 and notice that wheat is a very important crop in Mediterranean Europe. Actually, a Mediterranean climate is the best climate for wheat. The wheat plant needs plenty of moisture during the early part of its growth. However, when it is ready to ripen, it needs bright sunshine and dry weather to produce grain of the highest quality.

The Mediterranean lands of Europe grow winter wheat. The grain is planted in the autumn, usually in October or November, and when it comes up it looks like grass. All through the mild, rainy winter it grows slowly. In the spring the plants grow rapidly, and the heads of grain form. When the dry summer comes, the wheat ripens quickly in the hot sun.

Olive or fig trees, grapevines, and grain are often grown on the same field. The trees are planted in rows, and grapevines are trained up the trunks and on wires strung from tree to tree high above the ground. Between the rows of vines and trees, strips of wheat are planted.

Barley needs little moisture, and it will grow in higher latitudes and altitudes than any other grain. Can you explain what that means? It will grow on lands that are too dry for wheat. Turn to the map on page 80 and notice that barley is a very important crop in Spain. It does well in the central

and southeastern parts of that country, where the rainfall is only 10 inches in winter and even less in summer.

Usually rye and oats grow in cool climates. Yet, some rye is raised in Mediterranean Europe, and oats are surprisingly important there. Turn to the map on page 79 to see where rye is raised. By comparing this map with the physical-political map, you can see that it is grown chiefly on highlands. There the altitude makes the climate cool, but the soil is too thin to grow other crops.

Look at the map on page 77 and notice where oats are raised. Mediterranean summers are too hot and dry for oats, which are grown as a winter crop. In Mediterranean lands, winters are warm enough and moist enough for oats to grow.

**Irrigation.** In many places in Mediterranean Europe the land is irrigated. Along the Mediterranean coast of Spain, for example, lies a narrow strip of lowland. It is dry and sunny because it lies on the east side of highlands. This narrow coastal lowland has become one of the most productive parts of Spain. Streams flowing down from mountains supply water for irrigating gardens and orchards during the long, dry summer.

Oranges and lemons and many different vegetables grow on these irrigated lands. During winter and spring months, the markets of northern Europe are supplied with vegetables grown in Mediterranean Europe. The most important orange-growing regions in Europe are the irrigated lands near the Spanish city of Valencia, which you can find on the physical-political map. You can see that a river flows from the mountains to the lowlands near Valencia. The waters of this river are used for irrigation purposes.

There are many advantages in irrigation. The supply of water is certain and regular. Then, too, the streams that supply the water for irrigation often bring fertile soil from the highlands and deposit it on the lowlands. As a result, there is less need for adding fertilizers to the soil when it is irrigated.

Irrigation has made it possible for many regions of little rain to support a large population. It is possible to cultivate and produce crops throughout the year where the temperature and growing season are favorable. In many places in Mediterranean Europe, crops may be planted at any season of the year. In some places several crops may be grown on the same field during one year.

**The chestnut and the cork oak.** If you were to drive through the mountainous parts of Italy, you would see mile after mile of tree-covered slopes. You would see fig trees and olive trees. Higher up, where it is cooler and where there is more moisture, you would see forests of chestnut trees covering the slopes. In autumn, huge quantities of chestnuts are gathered and stored for food. They may be roasted or boiled and used as a substitute for potatoes. Sometimes they are pounded or crushed into a coarse meal which is used much as we use oatmeal or other crushed grains for breakfast food. And sometimes they are ground into flour which is made into bread.

Forests of chestnut trees cover many mountain slopes in other parts of Mediterranean Europe besides Italy. They are found wherever the altitude is high enough to make the climate sufficiently cool and moist for them to grow. They grow on the slopes of the Alps in southeastern France, on the slopes of the Pyrenees in both France and Spain, in the highlands of Sicily and of Sardinia, and in the mountains of Greece.

The cork industry is a very important forest industry in both Spain and Portugal. There, on rugged uplands of the south, are found cork-oak trees. It is the thick, spongy bark of this tree that supplies the cork bottle-stoppers you have seen. The light, soft cork is used in life preservers, on fishing rods, as lining for hats and shoes, for making linoleum, and in many other ways.

Some cork-oak trees live more than a hundred fifty years, but it is not till they are about twenty years old that they can be stripped



*Philip Gendreau*

**Near mountain towns such as this one in Italy, heavily laden donkeys are often seen along the road.**

of their bark. After the tree has been stripped of its bark, it begins to grow new layers. In about ten years the bark will be thick enough to be removed again.

Portugal is especially important for its cork-oak forests. Making cork products is one of that country's most important industries. Cork is Portugal's third and Spain's fourth most valuable export.

**The importance of animals.** Most of the pastures of Mediterranean Europe are not like those you have already studied. They are different because they do not have enough grass to feed many animals. In the northern part, where there is some rainfall both in summer and in winter, cattle can be raised. But in other areas the hot summer sun dries up the grass and the winter snows cover the mountain pastures. These areas can be used only part of the year.

Where the pastures are too poor for cows and horses, sheep and goats are raised. They require less food and water, and they can eat shorter grass. Many sheep on the Iberian Peninsula are of the merino breed. Thick, wavy wool covers the whole body of the



merino sheep, except the muzzle and hoofs. These sheep have adjusted themselves to life in Mediterranean climates. Though they do not provide very good meat, their wool is of extremely fine quality. Turn to the map on page 71 and locate the most important areas where sheep are raised.

Oxen, horses, and donkeys do not lead an easy life on the farms of Mediterranean Europe. Heavily loaded donkeys plod down country lanes and through city streets. Slow, sturdy oxen pull high-wheeled carts filled with grain. All the animals share in the work of plowing and cultivating the fields.

## Using the Minerals

Mediterranean Europe has small deposits of several minerals, but only a small part of the population makes a living by mining. Some minerals are used in the industries carried on in Mediterranean Europe, and others are exported. Although small supplies of coal are found in this region, more is imported from other countries. The coal that is mined does not satisfy the needs of the countries of Mediterranean Europe.

**The mines of Spain.** More than three thousand years ago, people from far-away lands came to Spain in search of metals. Spain is noted for its variety of minerals. There deposits of iron ore, copper, mercury, lead, zinc, and silver have been found.

Most of the iron ore is located in the north, near the Bay of Biscay. You can find this region on the map on page 62. On this coast is located the seaport of Bilbao, which handles most of the sea trade between Spain and western Europe. If you were to visit Bilbao, you would see ocean steamers at the piers taking on cargoes of iron for shipment to England, Belgium, and other iron- and steel-manufacturing regions. Some American steelmaking cities near the Atlantic coast use iron ore from Spain.

Spain does not have a large iron and steel industry. It has the iron, and it has deposits

of coal. But much of the iron is exported, and very little coal is mined. There are some deposits of coal in the north, near Oviedo, as you can see on the map on page 62. There are other deposits near the centre of the country, where poor transportation causes difficulties. Much of the coal used in Spain, however, is imported from Great Britain.

Most of the iron and steel plants that Spain does have are located near the Cantabrian Mountains. The cities in this region can get coal and iron, and some hydroelectric power has been developed from swift mountain streams. Manufacturing is not well developed in Spain, and the country has very few industrial centres.

The Sierra Morena in southern Spain contain copper, lead, and mercury. Here men have worked the copper mines for thousands of years. Today the most important copper deposits are in the western part of the Sierra Morena. The southern foothills of the mountains provide lead, and the northern foothills furnish mercury. The mercury deposits are the largest and richest in the world. Part of the mercury the Spaniards mine is sold to Canada. You have seen it in thermometers. It is also used in medicines. At one time its chief use was to separate gold and silver from other metals found in ore.

**Scarcity of minerals in Italy and Greece.** Mountains are usually storehouses of minerals, but, outside of the many deposits in Spain, very few valuable minerals have been discovered in the mountainous regions of Mediterranean Europe.

Most of Italy's deposits of minerals are found on the islands of Sardinia and Sicily. In Sicily there are some outstanding deposits of sulphur, Italy's most important mineral. For a long time Italy led the world in the production of sulphur, but the states of Texas and Louisiana now supply the largest percent of this mineral. Italy also has famous mercury mines in the mountains near the northern boundary. Only small quantities of other minerals have been mined.

Both Italy and Greece have fine marble. The quarries of both have been operated for centuries. Even today the most famous marble for making statues comes from Carrara, in the northern part of the Apennines. Find Carrara on the physical-political map. Perhaps the snow-white Carrara marble is better known than any of the Greek marbles.

## MEDITERRANEAN CROPS

List the crops grown in Mediterranean Europe. Put a check mark beside each crop on your list that is also grown in southern California. If you do not know what crops are grown in southern California, look them up in a geography book that includes the United States.

## MEDITERRANEAN LANDS AND PEOPLES

Mediterranean Europe is mainly an agricultural region, yet the farmers cannot raise enough grain and other foods to supply the needs of the people. Subtropical products such as olives, grapes, and citrus fruits are exported. Other kinds of foods are imported.

Some manufacturing is carried on in most of the cities, but there are only a few industrial centres. Mediterranean Europe does not have many raw materials, either to export or to use in its own factories. Manufacturing in Italy is so important that raw materials are imported from other countries. In turn, manufactured and subtropical products are exported. Trade has been developed to a greater extent in Italy than in any of the other Mediterranean countries.

### The Iberian Peninsula

You have already seen that the Pyrenees Mountains separate the Iberian Peninsula from France and the rest of Europe. Jutting out into the sea toward Africa, the peninsula is separated from that land only by the narrow Strait of Gibraltar. You will remember that the Iberian Peninsula is shared by two countries—Spain and Portugal. Perhaps this will remind you of another peninsula, which is also shared by two countries. What is its name? What are the two countries?

The most fertile parts of Portugal are its coastal lands along the Atlantic, while the most productive lands in Spain border the Mediterranean Sea. Between these two fer-

tile strips lies a wide, high, and dry plateau with a rather sparse population.

You can see on the physical-political map that three large rivers flow from this plateau through Portugal to the Atlantic. They have cut deep and narrow gorges in the plateau. These gorges are not easily crossed, and the rivers are so far below the surface of the plateau that they cannot be used for irrigation or for transportation. Harbors are located on them near the sea. What port is on the Tejo? Find the Guadalquivir River of Spain. This river is navigable as far as the city of Seville (Sevilla) and is therefore important for trade.

**Living on a dry plateau.** Much of the plateau is dry, dusty, and barren. Scarcely any trees grow there. In most areas there is only grass, and in summer the heat scorches the grass. In winter these highlands are so cold that it is possible to skate on the frozen lakes and rivers. Here and there are mountain ranges, but much of the plateau is fairly smooth. You can see on the physical-political map that some railroads have been built on the plateau. But the region is large, and many more roads and railroads are needed. Ox teams and mule trains are the means of transportation most often used. Slowly the patient animals plod across the wind-swept plateau with their heavy loads.

The chief industry on the plateau is sheep raising. There are thousands and thousands of sheep. All summer long, they roam over



the land. Shepherds wearing breeches of leather and jackets of sheepskin tend the grazing flocks. In the north and northwest, where it is not quite so dry, wheat is raised. Find the city of Valladolid on the physical-political map. During the winter and spring, fields in this region are green with growing wheat. At harvest time they turn golden. Afterward, later in the summer, they are parched and brown.

The only large city on this high plateau is Madrid. It was made the capital of Spain by a king in the Middle Ages because it lay in the centre of the country. Madrid has few natural advantages. It rises suddenly from the midst of broad, barren plains. In the winter, blasts of icy wind blow over the city, and in the summer the hot sun glares down

upon it. Because of its altitude, and because it is located in such open country, the temperature often changes suddenly. Sometimes at various times during one day there is a difference of  $50^{\circ}$  in temperature, and the shady side of a street may be as much as  $20^{\circ}$  cooler than the sunny side.

The people of Madrid depend upon food shipped from the cities on the coast. In the dry region near Madrid, neither vegetables nor cattle can be raised. There are some factories in the city, and leather articles are among the most important products.

The main streets of Madrid are long and broad and filled with a varied traffic. Automobiles make room for market-bound herds of sheep. The buildings in Madrid are modern and well built. The location of the city in the heart of the plateau makes it a natural centre for the rail and air transportation of Spain.

Brilliant sunshine and deep shadows on a hilly street in Lisbon. The house at the left is far up the steep hillside.

*Roger Coster from Rapho-Guillumette*



**Moist borderlands.** Most of the population of Spain is crowded into narrow strips of moist coastland along the Bay of Biscay and along the Mediterranean coast. You read on page 174 that iron is mined in the northern part of Spain. This is one of the industrial regions of the country, and agriculture is less important than mining and manufacturing. The soil is poor, but there is rainfall during both winter and summer. The forests are more like those of western Europe, and the rainfall is favorable for meadows. Small crops are raised on the little farms scattered over the hillsides, but the main rural industry is the raising of animals.

On page 172 you read of the narrow strip of lowland along the Mediterranean which has been irrigated. Practically anything can be raised there, but citrus fruits are most important.

Find on the physical-political map Barcelona, Spain's largest seaport and chief industrial city. In this region you would see not only busy factories and piers but also gardens and orchards. The most important of the industries is the textile industry. Cotton, wool, silk, and linen are manufactured. There are coal deposits near by, and streams flowing from the Pyrenees supply water power. Sheep grazing on the plateau supply an abundance of wool, but cotton is imported, chiefly from the United States. Barcelona's main imports are foods, fuels, raw materials, and manufactured goods. Fruits, textiles, olives, olive oil, and leather goods are among the exports.

**A prosperous little country.** Portugal is crossed by cool, moisture-laden winds from the Atlantic. They blow far inland, and bring sufficient rain to almost all the farming areas. Mediterranean plants and trees grow side by side with western European plants and trees. More than half the people farm and raise stock for a living. Though agriculture is the chief industry, many foodstuffs are imported. Methods of transportation are so poor that sometimes it is cheaper to import wheat from South America than to transport home-grown wheat from one part of Portugal to another.

Terrace after terrace of grapevines line the valley of the Douro River, for Portugal is one of the largest wine-producing regions of Europe. There are groves of olive trees in nearly all parts of Portugal, and many forests of cork oaks. Fishing is an important industry, and fishermen return from the sea with large catches of fish to be canned.

The capital and principal port of Portugal is Lisbon (Lisboa). It is built in terraces up the sides of low hills. Fishing boats lie along the wharves, and textile mills employ many people. The city is quite modern, but oxcarts still wind their way through the busy streets, and donkeys move out of the paths of automobiles and streetcars. Lisbon's chief exports are wine, fish, and cork.



*Courtesy French Press and Information Service*

The women are winding silk on spools in a factory at Lyon, France, a centre for silk manufacturing.

## Lowlands of Southern France

The valley of the Rhone River and the lowlands along the coast of southern France are a part of Mediterranean Europe. This part of France is similar to Spain and Italy. The farmers raise the same crops in much the same way. Some of the people follow occupations that are very different from those of industrial western Europe.

**The Rhone Valley.** You have seen that the Rhone River begins in the high Alps of the southern part of Switzerland. It flows from a beautiful valley glacier known as the Rhone glacier. At first the river rushes through deep gorges and carries along great quantities of rock materials worn from the sides of the valley. Before leaving Switzerland, however, it flows into Lake Geneva and drops the load it carries. When the Rhone leaves the southwest end of the lake it is a clear stream. Southward from Lyon, the current is less swift. The steep sides of the valley are covered with vineyards. Where it widens to the south, fields of wheat and other Mediterranean crops cover the lowlands along the valley and the coast.

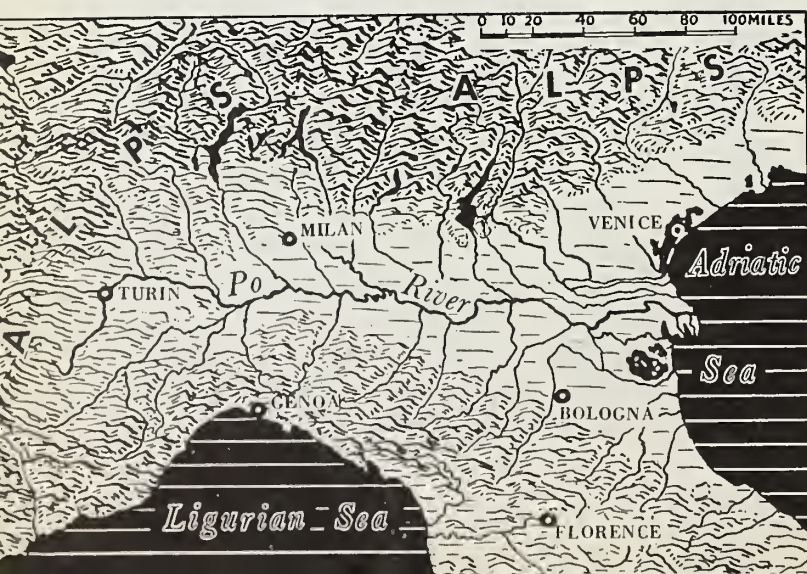
In this valley the raising of mulberry trees and silkworms is very important. A large silk industry grew up in the Rhone Valley



around the city of Lyon. A long time ago, silk cloth was woven in the homes of the people of the Rhone Valley, just as woollen cloth was woven in England and linen in Flanders. With the invention of the silk loom, the silk industry grew. Weaving continued in the homes, but it was also done in factories. Lyon and the near-by towns became noted for silk weaving. The local supply of raw silk was no longer sufficient for the factories of the Rhone Valley, and some silk was imported from China and Japan. As in many other textile centres, the weaving of artificial silk also became important in the textile cities of the Rhone Valley.

**The Riviera.** Eastward from the port of Marseille is a beautiful strip of coastal land known as the Riviera, which, as you know, extends into Italy. Lofty olive- and vine-covered mountains shut off the cold winds from the north and east, and the region faces the warm blue waters of the Mediterranean. Because its winters are so mild, the Riviera has long been a famous winter resort. You can see on the physical-political map that a railroad follows this coast, and there is also a fine highway which makes it possible for tourists to enjoy the scenery as they motor through this beautiful country. Although most of the people depend upon the tourists for their income, some make a living by raising flowers for making perfume.

A map of the Po Valley.



**The port of southern France.** Marseille is the chief trading port of France. People from all over the world can be seen on the steep, crooked streets of Marseille. The map shows that it is near the mouth of the Rhone River. The land around the mouth of the Rhone is a poor place for a city because it is low and swampy. Although Marseille is not situated on the Rhone, it is connected with that river by a canal.

Because of its swift current, the Rhone is not a good river for transportation, but it is used to some extent, and canals connect it with large rivers of industrial western Europe. The valley of the Rhone offers an easy route to northern France. Marseille is connected with all of northern and central France by roads and railroads which pass through the Rhone Valley.

Although Marseille has imports and exports of many kinds, it is best known for its large shipments of various kinds of oil: peanut oil, flaxseed oil, palm-nut oil, and coconut oil. Much of the trade with the French colonies is carried on through this port.

## Living in Italy

As you read on pages 40-41, the Romans of long ago ruled an enormous area in many different parts of the world as it was known then. Before they conquered other lands, they ruled only the country we now call

Italy. Italy is made up of two very different regions, the Po Valley and the peninsula. The Po Valley is one of the most densely populated regions in Europe. Almost half of the people of Italy live in this valley. It is connected by railroads with the countries of the rest of Europe, as you can see on the map on pages 166-167.

The greater part of Italy is the peninsula which extends south of the Po Valley. This is the less productive part. The peninsula is almost covered with mountains,

and the soil in most places is poor. A few areas have better soil, however, and on these most of the people live.

**Advantages of the Po Valley.** Use the map on page 178 to trace the Po River from its source near the boundary of France to its mouth. Long ago, what is now the valley of the Po was covered by a large, shallow gulf which opened into the Adriatic Sea. It covered the lowland of northern Italy, which you can see on the physical-political map. Streams from the Alps and the Apennines wore away rocks and loosened the soil. Some of them carried materials down to the gulf, where they were deposited. Gradually this gulf was filled, and the plain of northern Italy was formed. Now the Po flows across this plain. Tributaries from the north and the south, which you can see on the map on this page, still bring soil from the highlands. Day by day the Po River is building a larger and larger delta, adding about two hundred feet of new land each year.

The river drops sand and mud not only at its mouth, but also in its bed. Such deposits make river transportation difficult. The numerous rivers in the Po Valley actually increase the expense of land transportation, for many bridges are needed to cross them. But the good soil the rivers bring to the valley and the water power they supply make up for this expense.

Many of the rivers which rise in the Alps flow into long, deep, narrow lakes on their way to the Po. These lakes act as reservoirs, giving the streams a more even flow. These streams are ideal for the development of hydroelectric power and for irrigation. Since Italy has no coal deposits, its rivers are all the more important to the country. After the development of hydroelectric power, less coal was imported.

The lakes and river valleys are useful in other ways. They provide easy routes to and through the Alps and the Apennines. Along these routes are many resort towns, for this is one of the most beautiful parts of Italy.



*Eisenstaedt-Piz*

**Entrance to the St. Gotthard Tunnel, which connects north Italy with western and central Europe.**

The Po Valley produces a great deal of food. The climate is not the Mediterranean type, for there is plenty of rain throughout the year. Wheat, corn, and rice are raised. In no other part of the world is rice grown so far from the equator. This is the part of Mediterranean Europe in which dairying is highly developed. Much of the milk is used for making cheese. In other parts of Italy, cattle are used chiefly as work animals.

The high Alps protect the Po Valley from cold north winds, and mountain streams supply plenty of water for irrigation. These conditions make it possible for such fruits as oranges and olives to be grown in a region as far north as southern Ontario and Nova Scotia. Here, as in Lyon, mulberry trees and silkworms can be raised.

**Industries of the Po Valley.** Many factories, as well as rich farms, are found in the Po Valley. The region is well supplied with



power, and it has some raw materials. Hydro-electric plants have been built in the Alps and the Apennines, and power lines carry electricity to all parts of the valley. The hydro-electric power is used for driving the machinery of cotton, woollen, and silk mills. Italy supplies large quantities of silk for its mills. Some wool comes from central and northern Italy, but most of it is bought from other countries. Cotton for the mills is imported from the United States.

Two busy manufacturing cities in the Po Valley are Milan (Milano) and Turin (Torino). Turn to the map and notice that Milan has rail connections with Germany, Switzerland, and France. Notice also that these railroads cross the Alps. Now find Turin on the map. It is located at the head of navigation on the Po River. Like Milan, Turin is served by railroads that run through mountain passes to neighboring countries. Many different products are manufactured in these two cities. There are numerous textile mills, and iron and steel are imported for the automobile and machinery industries.

**Sea gateways to the Po Valley.** North of the mouth of the Po River lies Venice, a city built on a cluster of low islands. More than two thousand years ago, some of the people of Italy fled to these islands to escape from invaders. Venice started as groups of huts

resting on wooden piles driven into the oozy mud of a few of the islands. Today the city rises from many islands and has a charm that attracts thousands of tourists.

You would hear no loud traffic noises in Venice, for there are no automobiles or street-cars. Much more than in Amsterdam and Stockholm, winding canals take the place of streets. There are some paved squares and short narrow streets. But canals lead everywhere. If you wished to go from one place to another, you would climb into a gondola—a long, flat-bottomed boat with high curved ends. The oarsman standing at one end with his single long oar might sing as he paddled his gondola to your destination. If you were in a hurry, you would take a motor launch. If you wished to take a pleasant walk, you could wander from island to island on low, curved bridges. Venice is made up of more than a hundred islands, and has almost four times as many bridges.

There is no land about the city where crops can be grown or cattle can be raised. The people eat fish from the sea, and vegetables and fruits which come in small boats from the mainland of Italy.

The glass industry is important in Venice. Many different glass articles are made, from beads to mirrors. Laces, jewellery, and many other such things are made by the skilled hands of Venetian workers.

Genoa, the main export city of northern Italy, lies outside the Po Valley. However, two railroad lines cross the Apennines to the manufacturing centres of Milan and Turin, and the St. Gotthard Tunnel connects these cities with the trading countries of western and central Europe. The terraced slopes of the hills behind Genoa are covered with gardens and groves of fruit trees. Ships from all over the world crowd its harbor, and modern docks and huge warehouses line its water front. At one time

**Travellers arriving in Venice by train are taken in gondolas from the steps of the railroad station directly to their hotels.**

*Photo from European*





*Philip Gendreau*

The gaily colored houses and green vineyards of Amalfi climb up the terraced mountain sides from the blue sea. This city is typical of the cities of the peninsula of Italy.

Venice and Genoa fought each other bitterly for Mediterranean trade. When the Atlantic trade routes developed, Genoa was in a more favorable position. A look at the physical-political map will show you why. Besides, it has a better harbor. Genoa is an industrial city as well as a seaport, and it has shipyards and foundries.

**The peninsula of Italy.** From the Po Valley, the peninsula of Italy extends toward the south nearly six hundred miles. The physical-political map will show you that the Apennines curve around the Gulf of Genoa and extend the length of the peninsula. Almost all of this part of Italy is rough and mountainous. Look for lowlands on the map. You can see that the Arno and Tiber rivers flow through wide valleys. There are strips of coastal plains, but in many places these are broken by the mountains that end in high, steep cliffs at the water's edge.

Trace the railroad that follows the west coast. It passes through dozens of tunnels. You can't see them on the map, but you can find many places where the railroad goes from lowland to highland. On the mountain sides are many quaint old villages overlooking the sea. These and the terraced hillsides and orchards add to the beauty of the peninsula of Italy. But this is the poor part of the country. Water is scarce, and in most places there is none for the development of water power or for irrigation. The backward methods of farming and the crops that the farmers are able to raise resemble those of Spain and Greece.

Florence (Firenze), Rome (Roma), and Naples (Napoli) are the largest cities of the peninsula. All are on fertile lowlands. Florence is in the valley of the Arno River. Here agriculture is intensive. Do you remember what this means? Florence is the trading centre for the valley and for the neighboring





*Fritz Henle*

Vineyards and orchards surround this city in the highlands near Florence. Parts of an old wall and the many towers show that it is a very old city and was fortified against enemies.

highlands. If you look at the physical-political map, you will see another reason for the growth of Florence. It is near the route which crosses the Apennines to reach the eastern part of the Po Valley. You can see that Bologna is at the other end of the route through the mountains, and that railroads meet at that city as they do at Florence. The city of Florence is a centre of art as well as of trade. Some of the greatest

sculptors and painters of all times have lived and worked there. In its famous art galleries are found large collections of statues and paintings.

Rome is south of Florence, in the valley of the Tiber River. You may have read in your history book about how it was built on seven hills overlooking the Tiber. In early days, the hills of this region were the best places for settlements because the people

The swampy lowlands near Rome have been drained and are now used for farms on which grain is grown.

*Burton Holmes from Ewing Galloway*



could defend themselves against their enemies. They were also safe from the floods which sometimes covered the lowlands. Here the Tiber could be crossed most easily, and ships from the sea could come that far up the river. Rome became a centre of routes leading to all parts of the peninsula, and it became the capital and largest city of Italy partly because it had these good routes and a central position west of the Apennines. Rome is not a manufacturing city. Most of the people make a living by working for the government or by entertaining visitors. The ruins of ancient buildings, such as the Forum and the Colosseum, attract visitors. A part of Rome called Vatican City is not part of Italy, but is an independent state. It is the home of the Pope, who is head of the Roman Catholic Church.

Mount Vesuvius overlooks the busy city of Naples. This beautiful city faces a rounded bay on the west side of the peninsula. Pink, blue, and yellow houses cover the slopes enclosing the bay. Naples is crowded, and life in the streets is picturesque. In the poorer sections, loaded donkeys and automobiles move slowly through the crowded, roughly paved streets. Women and children like to meet and talk at the fountains that supply water for the homes.

Naples has the only good harbor south of Genoa, and it handles most of the overseas trade of southern Italy. Passenger as well as freight ships dock here, for many tourists visit the Mediterranean countries, especially during the winter. The city is the trading centre for the fertile farm lands of the countryside, and it has a variety of small factories making such things as gloves, jewellery, and textiles.

## Living in Greece

On page 40 you read about the Greeks of ancient times. Their country, very little larger than our Maritimes, is very crowded. Greece has about half as many people as Canada even though the land is so moun-

tainous that one-third of it cannot be used. It is rocky and sandy, and in many places not even grass will grow.

**Ways of making a living.** You can see on the physical-political map that the small plains of Greece are separated from each other by rough mountains. Cereals, grapes, and olives have been grown on these plains for at least two thousand years, and more than half the people make a living through agriculture. Still, not enough food is grown to supply the needs of the people, and some must be imported. The farms of Greece are small. They are about half the size of those in Belgium, and their yield per acre is low. Methods of farming are primitive. At harvest time the farmers cut the grain with hand sickles, and thresh it by walking over it. Very little fertilizer is used, and crop rotation is seldom practised. Instead the farmers let a part of their land lie *fallow* each year. In other words, they do not plant crops on it. They have to do this so that the land can recover its fertility. If the same crops are planted in the same fields year after year, and if fertilizer is not used, the soil becomes very poor and needs a rest.

Most of the rough, mountainous land is used for grazing. The grass in many places is too short and dry and tasteless to satisfy any animals except goats and sheep, and these animals supply the Greeks with most of their meat and cheese and with wool.

Only a very small number of the Greeks are employed in manufacturing industries. There is little coal, there is scarcely any water power, and there are few raw materials. Practically all the industries depend upon agricultural products. Among the factory products are olive oil, wine, textiles, and leather goods. Most of these things are used in Greece, but some are exported. Tobacco, too, is exported, while both food and manufactured goods are imported.

The Greeks, like the Norwegians, are good sailors and fishermen. In both countries the coast line is irregular, and most of the people





*Kostich Photo Service*

Rising against a background of modern buildings are the lovely columns of an ancient Greek temple.

live near the sea. Greece used to have a busy merchant marine, whose carrying trade provided a large part of the country's income. Greece had few products of its own to export, but the ships carried the cargoes for many of the other trading countries in the Mediterranean region.

**Cities and trade routes.** Find Athens (Athenai) on the physical-political map. Athens was the centre of ancient Greek civilization, and ruins of the old city can still be seen. Today Athens is the capital of Greece. Many of the buildings are made of marble from near-by quarries, and the city gleams white and bright against the clear blue sky. Since Athens is not on the sea, the city of Piraeus (Peiraievs) serves as its port. In ancient days a wall was built from Athens to Piraeus to protect traders and their goods from enemies and thieves. Today a railroad follows this route.

Turn to the map and find the Greek port of Salonika (Thessalonikē). Notice that it is on the Aegean Sea, near the mouth of the Vardar River. This location makes Salonika more than a port for Greece. A great deal

of the Mediterranean trade of central Europe is handled there. You will understand this better if you trace a railroad from Salonika northward into central Europe.

## Adriatic Shorelands

Mediterranean climate is found in Albania and in the narrow strip of Yugoslavia between the mountains and the Adriatic Sea. This part of Yugoslavia is called Dalmatia. You can see on the physical-political map that the Dalmatian coast is broken by a great many islands. The shore line is very irregular, resembling those of Norway and British Columbia. Few ports have developed, however, because the coast is cut off from the interior of the country by rugged mountains.

Only a few short railroad lines wind their way from the coast into the mountains. Because it is so difficult to reach the coast from the interior of Yugoslavia, much of the trade goes through the port of Fiume. Turn to the map and notice that this port has rail connections with the interior. Some of the trade of Yugoslavia is carried on through the port of Trieste.

The harbor of Valona (Vlonë) has been improved to handle the small foreign trade of Albania. The land is rough, and transportation is very poor. Many rivers have no bridges; they are forded. Only pack horses and oxcarts can travel on the narrow mountain trails. On the other hand, the country offers good air transportation. Roads and railroads are not needed for air travel, and it is easier to develop air service.

Very little industry is carried on in these Adriatic shorelands. There are many kinds of fish in the waters around Dalmatia, and some of the people are fishermen. Others are farmers. Very little land is left for farming, however, because the mountains come so close to the sea. In Albania, only about one-tenth of the land can be used for raising crops. In the coastlands of Yugoslavia and in Albania, many sheep and goats graze on the rough hillside pastures.

# THE GEOGRAPHY WORKSHOP

Mediterranean Europe is an especially interesting area. Living in this area is influenced by climate, mountains, and the sea. Watch especially for these influences as you follow the suggestions in the Workshop.

## I. THE WORLD

### IN YOUR OWN COMMUNITY

No matter where you live, your community owes a great debt to ancient Mediterranean Europe. If you cannot think why, turn back and read pages 40-41 again. Mediterranean countries have greatly influenced our art, architecture, music, literature, language, religion, and government, and even our thinking.

#### *A Mediterranean climate*

One region in North America can be compared closely with Mediterranean Europe—the region around Los Angeles in California. There, as in Mediterranean Europe, is found a coastal region with cold winds cut off by mountains. There is a light rainfall, coming almost entirely in winter. As a result the grassy slopes are green in winter and brown in summer. Winters are mild and rainy enough for grains to grow, and the weather is warm enough throughout the year for subtropical crops to grow under irrigation.

#### *French influence in Canada*

The influence that Mediterranean Europe has had upon Canada is seen most clearly in the eastern part of the country. Many French Canadians came from Southern France, bringing with them French names, French customs, French literature, music, and art.

Make an outline map of the province of Quebec and another of France, and print on them the names you can find that are common to both. How many came from Mediterranean France and how many came from West European France? In what provinces of Canada, besides Quebec, are there French place names?

Do you know the Canadian folk song “Sur le Pont d’Avignon”? Like many of our songs it is from Mediterranean France. Much of our best literature, music, and painting has been influenced by the work of writers, composers, and artists in that region. Some of our buildings, too, are like theirs. If

you haven’t seen the Chateau Frontenac, try to find a picture of it. Is it built in the same style as any of the buildings shown in pictures of Mediterranean lands?

#### *Peoples and products*

Spain once owned a vast area that included all of South America except Brazil and that extended into North America as far north as Florida and California.

You have probably noticed that in Canada there are far more people of Italian and of Greek ancestry than of Spanish. Yet in many ways the geography of Canada is more like Spain’s than like that of either Italy or Greece. But in the old days Spaniards preferred to move to the Spanish colonies. Even when Spain lost the colonies, Spaniards found there the language and customs that they had known at home. So most Canadians from Mediterranean Europe are not from Spain, but from France, Italy, or Greece.

In almost every community you can find people to tell you more about Mediterranean Europe. A great many war veterans have been there, and it has always been visited by tourists. A person who is keenly interested in First Aid may be able to tell about the connection between the history of the St. John Ambulance Association and that of the island of Malta. Look for people and products from Mediterranean Europe, as you have for people and products from other regions.

A group from your class might visit a large grocery store to discover what products from Mediterranean Europe it has for sale. The group would then report orally to the class and prepare a display of the articles it has found from Mediterranean Europe. One of your class should write a letter to thank the grocer for his coöperation.

## II. WORD PROBLEMS

The word problems following are hard, but with careful thought you can solve all of them. The product or place that is named should remind you of the one left out.

1. What flax is to Northern Ireland, xxxxx worms are to the Rhone and Po valleys.

2. What Manchester is to England, xxxxx is to Spain.



3. What the merchant marine of Norway was to western Europe, the merchant marine of xxxxx was to Mediterranean Europe.

4. What butter is to northern Europe, xxxxx xxxxx is to Mediterranean lands.

5. What the region from southern England to the Rhine is to industrial western Europe, the xxxxx Valley is to Mediterranean Europe.

### III. WHAT YOU CAN READ FROM PICTURES

Write a paragraph describing what you see in the picture on this page. Explain how you know that the city is a seaport and that it is built on a hillside. Describe the buildings, telling of what materials they are made, and what kind of roofs they have. Why is not more timber used in the buildings?

If you can, add two other short paragraphs. First, from what you can see of the shore, tell how it is like other Mediterranean coast lines. Second, compare the buildings in this picture with those in other pictures of Mediterranean lands. There is a distinct Mediterranean style of architecture. From the pictures, do you think you could recognize a building in this style? If so, explain how you would recognize it.

*Fritz Henle*



### IV. A CARGO FROM MEDITERRANEAN EUROPE

A Greek ship is about to sail for the British Isles. It will stop at various Mediterranean ports to pick up a cargo. When it docks in Liverpool, it will be carrying ten of the products named below. Which of the following do you think are most likely to be in its cargo: almonds, butter, coal, cork, cotton bales, cotton cloth, currants, leather goods, lemons, marble, meat, mercury, olive oil, palm oil, silk, tobacco, wheat, wine?

### V. IMAGINARY PICTURES TO SORT

Which of the following pictures could not have been taken in Mediterranean Europe?

1. A wide plain, with fields in which sugar beets, potatoes, and oats are all growing at the same time.

2. A valley in which there are orange groves and almond orchards. Fig trees grow on the hillsides.

3. The interior of a large dairy barn with a long row of cows waiting to be fed. Through the window you see great stacks of hay. The haystacks, fences, and barnyard are all covered with snow.

4. A vineyard on a terraced hillside. Olive trees grow on the slopes above the terraces. There is a small village of stone houses on the hilltop.

5. Goats and sheep grazing on a steep, rocky hillside. The grass is short and grows in scattered clumps. The only trees are a few small pines with bushy tops.

### VI. THE LATEST NEWS FROM MEDITERRANEAN EUROPE

When a newspaper prints an article sent from another city, it begins the article with the name of the city and the date on which the article was written. This naming of place and time is called the date line. Look through several issues of a large city paper for articles with date lines showing that they came from Mediterranean Europe. What do you know about the cities named in the date lines? Do you understand the articles any better because you know something about the cities and the countries in which they are located? Do any of the details given in the articles add to your knowledge of the geography of Mediterranean Europe?



# *Living in Africa*

## EXPLORING THE CONTINENT

Africa has always been a mysterious and romantic land. Egypt was the home of one of the oldest civilizations in the world, but the Egyptians knew little of their own continent. Later, Phoenicians, Greeks, and Romans colonized the Mediterranean coast of Africa. All of Africa north of the Sahara became part of the Mediterranean world. No one thought of the coastlands as being very different from Europe, but the great desert to the south was strange and mysterious. About the land beyond the Sahara the ancient people heard only fantastic stories.

Hundreds of years passed. Arabs came from Asia into North Africa. They then

conquered Egypt, the Mediterranean coastlands, and the people of the desert. They even crossed the Strait of Gibraltar and invaded Spain. Europe was cut off from Africa, for Arabs and Europeans were enemies.

Then came the great age of exploration. Among the earliest explorers were the captains trained and sent out by the Portuguese prince called Henry the Navigator. Year after year Prince Henry sent his captains to sail southward along the African coast. Year by year they went farther, building ports and trading posts for those who followed.

Four years before Columbus landed in America, a Portuguese captain reached the



southern tip of Africa. A few years later another captain sailed around southern Africa and northward along the east coast. Then he crossed the Indian Ocean to India.

Thus the coasts of Africa became known to Europeans. On maps the continent was shown correct in size and shape. Harbors, trading posts, and river mouths were named. Inland, the maps were blank or were filled with pictures of elephants, lions, and ostriches. Until recent years Africa was called the Dark Continent, not because of its dark people and dark forests, but because so little was known about it.

Fortunately the maps are filled in now. With their help you can explore Africa for yourself and learn some of the reasons why

it remained the Dark Continent for so long. There are good reasons why the exploration of Africa progressed so slowly.

**Study guides.** As you study about Africa, keep the following questions in mind. They will help you understand what you read and what you learn from maps and pictures.

1. Why is travel in Africa difficult? (II)
2. What are the great natural regions of Africa? How do they differ in surface, climate, and vegetation? (VI)
3. How do density of population and ways of living differ from region to region? (III, IV, V)
4. How have Europeans changed ways of living in Africa? (IV)
5. Why is Africa of world importance? (I)

## WHAT WE CAN READ FROM MAPS

### THE LOCATION OF AFRICA

When you begin the study of a new continent, you naturally wish to know where it is. Africa is across the Mediterranean Sea from the Mediterranean lands of Europe. Turn back to the map on pages 166-167 and find the part of Europe that is closest to Africa. How far apart are the continents at the nearest place? Is any part of Africa farther north than parts of Europe?

Use a globe to answer the following questions. What is the great-circle distance from Montreal to Dakar in Africa? Montreal to Cairo? Montreal to Capetown? Flying from Montreal to Cairo by a great-circle route, what countries would you cross?

### THE SIZE OF AFRICA

About how wide is Africa at its greatest width? Use the map on page 189 for measuring. About how long is it at its greatest length? Now turn to the map on pages 30-31. Through how many degrees of latitude does Africa extend? How many of these degrees are north of the equator and how many south? What American city is in about the same latitude as the northernmost point of Africa? What city is in about the same latitude as the southernmost point of Africa?

Through how many degrees of longitude does Africa extend? When it is noon at the eastern tip of Africa, what time is it in Dakar? What time is it in Montreal?

Using the tables on page 369, find the size of each continent. Draw a line to represent each one, letting a quarter of an inch stand for 1,000,000 square miles. How much larger than North America is Africa?

On a globe, hold a piece of thin paper over the Dominion of Canada. Trace the outline of the country. Now cut out your outline map of Canada. Using it as a pattern, make another just like it. Prove that you can fit our whole country into Africa twice, with large areas left over.

### THE SURFACE OF AFRICA

Turn to the map on pages 10-11. At a quick glance, without using the key, what impresses you about the color of the map of Africa? Do you see any other continent with so much of its area shown in brown and yellow? Africa has no really large lowlands. Most of the continent is more than 1000 feet above sea level. Nearly the whole southern part of the continent is more than 2000 feet above sea level.

Most of the land above 2000 feet in altitude is a high plateau. The part between



A relief map of Africa.



1000 and 2000 feet is mainly plateau, too, even though it is not so high. In many places the edge of the plateau is so steep that people cannot climb it easily. Rivers tumble off the edge in stretches of swift rapids and beautiful waterfalls.

Now you have found one reason why Africa remained unexplored for so long. The early explorers of Canada and other new lands travelled on the rivers. Africa has only a few great rivers, and even on these it is impossible to travel by boat from the coast to the interior of the continent.

On your map of Africa, pages 30–31, the coast line looks smooth and regular. You can see that it does not have many deep bays and islands close to shore. In other words, it does not have many good harbors. Even the river mouths are not good harbors, for most of them have sand bars at the entrance.

On the relief map, page 189, you will find the Atlas Mountains near the northwestern coast of the continent. Far away near the southeastern coast you will find the Drakensberg. These are the only long mountain ranges on the continent. In the highlands of eastern equatorial Africa there are high mountains, but they stand either in short ranges or all alone. Most of the highlands are merely the higher parts of the plateau.

On an outline map of Africa, draw colored lines to show the edges of the land that is more than 5000 feet high. Do not try to show every detail. A simple outline of the largest areas will be enough.

## RAINFALL AND VEGETATION OF AFRICA

On the map you have just made, outline in color the parts of Africa that have more than 40 inches of rain in a year. The world rainfall map, you will remember, is on pages 12–13. In the same color, draw a broken or dotted line around the regions that have less than 10 inches of rain. Between what latitudes, north and south, do you find most of the area which has more than 40 inches of rain? Between what latitudes, north and south, do you find the large areas with less than 10 inches of rain? Compare rainfall in the same latitudes on other continents.

Now look at the vegetation map on pages 16–17. What kind of vegetation do you find along the equator on the western side of the continent? What kind do you find along the equator on the eastern side of the continent?

What kind do you find in **most** of the region which has less than 10 inches of rain?

The rainfall and vegetation maps furnish you with another clue to the reasons why Africa remained so long unexplored. North Africa and much of East Africa are deserts. Western South Africa is a desert. It is very hard to travel across these deserts.

## REGIONS OF AFRICA

On your outline map, draw a line around the forested regions. Draw another line around the regions of desert vegetation. Now be very careful as you work. You are going to finish your map in a way that will make it extremely helpful to you.

First, find the forested regions that have more than 40 inches of rain. You already have the 40-inch rainfall line on your map and a line around forested regions. Color lightly the regions enclosed by *both* of these lines. Green is a good color to use.

Second, color lightly the regions that have desert vegetation and less than 20 inches of rain in a year. Pink is a good color to use for these regions.

The large regions still white on your map are mainly grasslands, but the grasslands are not all alike. In eastern Africa, notice the lines that show land more than 2000 feet in altitude. Turn to the growing-season map. Across eastern Africa add to your map the lines that enclose a region which has no frost at any time. You can find a region which is more than 2000 feet high, is a grassland, has less than 40 inches of rain in a year, and has no frost at any time. When you find this region, color it yellow.

Now you have a map that shows you the great regional differences of Africa. You will need it as you study. It should show two regions along the equator. To the west is the tropical rain forest and to the east is the high, dry grassland. At the northern and southern ends of the continent there are deserts. Parts of your map are still uncolored. You will learn about these regions, too. The map on page 189 tells you what the large regions of Africa are usually called.

## WHERE PEOPLE LIVE IN AFRICA

When you look at the population map, pages 18–19, you see at once that Africa is not densely populated. What is the population density over most of Africa?

The areas of denser population are shown as scattered spots on the population map. Most of these spots are rather small. How many areas of denser population are there? How many are on the coast? How many are along the rivers?

You can see that most areas of denser population are on the coast or on rivers, but you cannot explain from your maps why they are located just where they are. The explanation will have to wait until you have studied the regions of Africa in more detail.

## LIVING IN NORTH AFRICA

At the Strait of Gibraltar, Africa and Europe almost touch. If you were to go through the strait in a ship, you could see both coasts plainly.

Some writers have said that southern Spain is like a piece of Africa in Europe. Other writers have said that Europe really extends to the Atlas Mountains. The truth is, both are parts of the same Mediterranean region.

### The Mediterranean Region

In Africa, the real region of Mediterranean climate is not large. It covers only the area from the crest of the Atlas Mountains to the sea. The mountains bring rain and protect the coastal region from the hot, dry winds of the desert. The climate of the region is influenced, too, by its location at the north-western edge of the continent. In winter there are moist winds from the Atlantic.

**Products of the Tell.** As you can see on the physical-political map, there is little lowland between the sea and the Atlas Mountains. Both the physical-political map and the relief maps suggest that the land does not slope smoothly from the coast to the high mountains. First there is a strip of land along the coast called the Tell. This is not a coastal plain, for it is broken by ranges of hills and low mountains. Farther back from the coast is a plateau, and beyond this rise the peaks of the Atlas Mountains.

Have you always thought of Africa as hot? You would not think so if you were in north-western Africa in winter. The mountain region is cool, and snow often falls in the

winter even in the Tell. Most of the winter, however, is chilly rather than really cold. As in the Mediterranean lands of Europe, winter is the rainy season. It does not rain all the time, but the skies are often cloudy and there are many hard rains. From April to the latter part of September there is no rain at all except on the mountains.

Even though the winters are often frosty, farming goes on the year round. As in the Mediterranean lands of Europe, grain is grown during the winter and is harvested in the spring. Wheat and barley are the grains most commonly raised. From early spring to late fall, vegetables and fruits are harvested. On irrigated land the Tell farmers grow almonds, figs, olives, lemons, oranges, apricots, peaches, and grapes.

**The higher lands.** Just back of the Tell lies the rather high, dry, and barren plateau. Here most of the people are herdsman. They raise large numbers of sheep, goats, and camels. The climate is too dry for fruit and grain to grow, except in a few valleys where the fields are irrigated with water supplied by streams that flow down from the mountains. Esparto, a kind of grass, is grown on the plateau and also in the Tell. The people of northwestern Africa use it for making ropes, sandals, and matting. Large quantities of esparto are exported to Europe. There it is made into paper.

Southeast of the plateau rise the high and snowy peaks of the Atlas Mountains. The lower slopes are covered with forests of both cone-bearing and broadleaf trees. Among the broadleaf trees are cork oaks. Cork, bark





Fritz Henle

Which parts of this picture remind you of other Mediterranean lands? Which are typical of Africa?

to be used in tanning leather, and timber are obtained from these forests and are among the important exports of the region.

**People of Mediterranean Africa.** On this page is a picture of a little city near the Strait of Gibraltar. In the distance you see a low range of mountains, with farms on the slopes. In Mediterranean Europe you might see similar low, bare-looking mountains with cultivated slopes, but you would not see a town like the one in the picture. The style

of these buildings is characteristic of North Africa, as is the style of clothing the man is wearing. The early people of North Africa were Berbers, who are much like the Egyptians. Later, Arabs came to the region from the east. Now the people and their ways of living are a blend of Berber and Arab.

Most of the cities of the African Mediterranean region are seaports, as you can see on the map on pages 30–31. Farm, animal, and forest products from the region are sent out through these ports, as are products from the Sahara. Inland there are some small towns and villages. Farmers usually live in village communities, not on their own farms.

## Living in Desert and Oasis

You have learned that the true Mediterranean region of Africa is the strip between the high Atlas Mountains and the sea. Eastward from this region, the coastlands become drier and drier. Around Tripoli, Mediterranean crops are still grown. Farther east the land becomes too dry for crops. Both rainfall and vegetation maps indicate that here the desert meets the sea. One small area, near Bengasi, has a little more rain. If you compare the rainfall map with the physical-political map, you can explain why.

**The great desert.** Beginning along the Atlantic coast of Africa is a desert region so large as to be almost beyond imagination. As you can see on the vegetation map, it reaches across Africa, across Arabia, and on to the northeast, far beyond the centre of Asia. At its farthest extent it stretches almost a third of the way around the earth.

The desert area in North Africa is nearly as big as all Canada. Though the eastern part has other names, people usually think of it all as the Sahara. From the time we learn to read, we see stories about Arabs in long robes, riding camels across bare sand dunes. Perhaps when you see the word “desert” this is the first picture that comes into your mind. Parts of the desert really are made up of bare

sand. In other parts the ground is covered with small stones that look as if they had been polished. In still other places the surface is solid rock.

**Desert herdsmen.** When you see pictures of Arabs on camels, you may be sure they do not live in a completely barren desert. Such land does not afford people any way of making a living. Fortunately, only a small part of the desert is made up entirely of bare sand, stones, or rock. Most of the Sahara has enough plants to support a few animals.

You have read before about desert herdsmen. Most of them live in tents and drive herds of sheep and goats from place to place. They keep camels, too, and some of them have a few cattle, donkeys, mules, or horses.

Most of the Sahara has a little rain. Over a great part of the area the rain comes in sudden hard showers, and these are very irregular. When the herdsmen of a nomad tribe learn that rain has fallen in a certain place, they go there with their animals. By the time the plants in that place have been eaten, rain will have fallen somewhere else.

**People of the oases.** Most of the people of the desert region are not herdsmen but oasis farmers. Herdsmen would have a hard

time living in the desert if it were not for the farmers who trade them grain and fruit for wool, meat, and the skins of animals.

Oasis farming depends upon irrigation. In some oases water flows out of the ground as a spring. More often it is drawn from wells, as in the left-hand picture below. Sahara oases are usually found in groups. Some follow the course of a dry river bed, where there is water under the ground, while others depend upon a group of springs. Some oases cluster around the edges of the highlands. A few get their water from rivers flowing on the surface.

The size of an oasis depends upon how much water is available. The farmers make the water go as far as possible. In most cases they do not even build their houses on land that can be irrigated. Instead of doing this, they live in villages in the desert at the edge of the oasis.

The most common kind of house is made of mud, dried and hardened in the sun. Such houses are easy to build, for they do not need materials that must be carried across the desert. The thick walls are also a good protection against the hot sun.

The oasis farmer uses his land intensively. He may have only a few acres of the precious irrigated land, but he makes it do the work

**Water and dates from this oasis will be exchanged for wool and meat brought in by desert herdsmen.**

*Photo by Mac Hole*



*Frank C. Chevalier*





of two or three times as much. First, he has his date palms. Dates are perhaps the most natural crop for a desert oasis. The palms need plenty of water around their roots, but the fruit is spoiled if rain falls while it is ripening. Dates are a real part of the food supply in the desert. When other feed is scarce, they may even be given to animals.

Besides his date palms, the oasis farmer has other fruit trees. He grows citrus fruits, figs, pomegranates, olives, and guavas, as well as the common fruits of cooler lands. Almonds and pistachio nuts are grown also.

Vegetables are grown under the trees in the orchards and on other plots of ground. Some vegetables grow best in the hot summer, others in the cooler weather of winter. Many vegetables are not harmed even by an occasional frost. Wheat, barley, oats, and flax, too, are grown in winter. Corn and millet are usually raised in summer.

**Trading with desert peoples.** In the larger oases the people are often engaged in manufacturing and trade, as well as in farming. Dates are dried and packed for shipment. Goatskins are made into leather. Pottery is manufactured, and blankets and carpets are woven. The oases people have all these things to sell.

The nomads are the traders of the desert. They come to the oases to buy food and manufactured articles for themselves, and they also carry goods for the oases people. Trails cross the desert from oasis to oasis. Along these trails caravans of camels carry dried dates and a few other products toward the towns at the edge of the desert. Many products are sent to the ports for export.

Europeans have talked for many years about building a railroad across the Sahara. The difficulties of building such a railroad are great, and there could scarcely be enough trade and travel to make it pay. There are now a few roads by which trucks, buses, and automobiles can reach some of the most important oases. Airplanes, too, are used for travel across the desert.

## The Oasis of the Nile

One oasis is so large and so different from the rest that it requires special study. This oasis is the long, narrow strip of irrigated land along the Nile. The land beyond the irrigated strip is desert. On the population map, pages 18-19, you can follow this strip of irrigated land. On the map it appears as a narrow band of dense population. If it were not for the Nile, the Sahara would extend across the entire continent. There would be no area of dense population in it anywhere. Egypt would be wasteland, with no cities, railroads, or farms.

**Early farmers along the Nile.** Farmers have been growing crops in the Nile Valley for a long, long time, probably for about six thousand years. The Egyptians did not know where the Nile water came from. They knew only that the great river flowed down from the south. Wherever its waters reached, the land was green. Beyond its reach, there was only desert. In winter the Nile shrank. There was not enough water to irrigate the fields. In the middle of June the river was at its lowest. Then more water came, and still more. Soon the river flooded its banks and continued to rise until September.

The Egyptian farmers prepared for the flood before it came. The small fields were surrounded by walls of earth. When the flood was at its highest, it filled the walled fields far back from the river bed. Even the fields a little above high-water level could be flooded by lifting the water.

When the flood had gone down, the water was allowed to flow out from the soaked fields. The flood waters were muddy. While the water stood still on the fields, the mud settled and left a thin layer of new soil. When the fields were dry enough, farmers plowed them and planted grain or other seeds.

**Modern Egyptians.** With the old methods of irrigation, crops could be grown only in the winter. Now only a small part of the



*Metcalf from Black Star*



*Photo by Mac Holo*

A family and its collection of animals stroll beside one of the many irrigation canals stretching out from the Nile River. Sailboats, such as you see here, are a common means of transportation on the Nile.

Nile Valley depends upon the floods for irrigation. Dams have been built to hold back the water. Most important for Egypt is the great dam at Aswân. You can find Aswân on the physical-political map, pages 30–31. Smaller dams have been built farther down the river.

Dams raise the level of the water in the river so that irrigation canals can carry it to higher land than the flood waters ever reached. The great dam at Aswân evens the flow of water during the year. In the winter and spring, water is released from the storage basin behind the dam. Thus the farmers of Egypt have water the year round. They can grow two or even three crops on their land each year, instead of one.

Most Egyptian farmers live in closely built villages, above flood level. The land held by each farmer is a narrow strip reaching to the river or to an irrigation canal. The farms are tiny, but each little field does the work of two or three, as in the smaller oases.

In the spring, Egyptian farmers plant rice, corn, and millet. Wheat, barley, vegetables, and flax are grown during the winter. Clover, too, is planted during the winter and can be cut four or five times. It is needed as feed for the numerous cattle, donkeys, mules,

and camels of Egypt. During the summer and fall the cotton and sugar cane are harvested and the dates ripen on the palms.

During the fall and winter Egypt produces crops usually grown in middle-latitude regions. Its summer crops are subtropical, as you would expect from the latitude. Cotton is the great *cash crop* of Egypt; that is, cotton is the crop people grow and sell to get money. Most of the cotton is exported.

The Nile Valley is chiefly a farming region. Its few factories use mostly agricultural raw materials. There are cotton gins to separate cotton from its seeds, textile mills, and mills making cottonseed oil and cottonseed cake for stock feed. Some of the oil is used by soap factories. There are also flour mills and sugar refineries. A railroad follows the Nile up to Aswân, but the river is the chief means of transportation. Steamboats and many smaller boats travel on the Nile.

Egypt has only two very large cities, Cairo and Alexandria. Once upon a time Alexandria was not only the largest city in Egypt but the largest city in Africa and in the whole world. Today Cairo, at the upstream point of the delta, is the largest city in Africa. With a million and a half people of many religions and races, Cairo is a crowded and colorful



city. Caravan trails from many parts of the desert meet at Cairo. Nile boats bring goods from the upper valley. Railroads help make it a trading centre.

Alexandria, founded and named by Alexander the Great, is today Egypt's chief seaport. Its site is a long, narrow strip of flat land jutting out between a lake and the sea.

Egypt extends far east and west of the Nile, but few people live outside the irrigated valley. Two cities, Port Said and Suez, stand at the ends of the Suez Canal. This canal cuts across the Isthmus of Suez and is one of the most important waterways in the world. Ships travelling between Europe and Asia are saved the long trip around Africa.

#### WHAT IS WRONG WITH THIS STORY?

Find at least ten statements that could not be true in the following story.

Ahmed was an Arab boy, the son of a desert herdsman. He had lived all his life in a tent on a desert of bare sand. He had once seen grass growing on an oasis, but he had never seen a tree or a flower, or even seen a drop of rain.

One day Ahmed's father said he was going to Egypt and Ahmed might go with him. They were going to Egypt to sell wool, sheepskins, goatskins, and camel's hair. They hoped to be able to buy a new plow.

After many days of riding camels, Ahmed and his father came to the Nile Valley. There for the first time in his life Ahmed learned how cold weather feels. Ahmed pulled his robe tighter around him as he stepped from the desert into the damp, chilly air of the valley. It was winter, and there was rain almost every day. Ahmed enjoyed watching the boats on the wide, flooded Nile. He liked the dates and oranges, which do not grow anywhere in the desert except in Egypt. On the way back they took a train part of the way across the desert, so that they could get home faster.

## SOUTHWARD FROM THE SAHARA

You have seen now the part of Africa that faces toward the Mediterranean. This is made up of the Mediterranean coastlands, the Sahara, and Egypt. The part of Africa south of the Sahara is very different. The people of this land went their own way for thousands of years, having little contact with the rest of the world. They developed a civilization of their own, different from any you have met so far in your studies.

Look for a moment at the map you made when you began to study Africa. South of the Sahara is a belt of grasslands. These grasslands, called the Sudan, are a transition region in climate, vegetation, people, and ways of living.

**New climatic regions.** Turn first to the rainfall map on pages 12-13. The line of 10-inch rainfall crosses the northern Sudan. Then there is a narrow band that has 10 to 20 inches of rain. The 20- to 40-inch rainfall

region is also a narrow band except in the east. Farther south, but still in the grassland region, there is a large area that has 40 to 60 inches of rain.

One important difference between the rainfall of the Sahara and that of the Sudan is not shown on the rainfall map. The little rain in the Sahara falls mainly in winter. In the grassland, most of the rain falls in summer. In moving from the Sahara to the Sudan, then, you move from a region of winter rainfall to a region of summer rainfall.

The growing-season map shows another difference. The Sahara sometimes has frosty nights, and the edge of this region of occasional frost crosses the northern part of the Sudan. In most of the grassland region there is no frost at any time.

**A new vegetation region.** The pictures on page 197 show how the vegetation changes southward from the Sahara. The first picture

was taken in the desert, near its southern edge. The second was taken farther south, on land that is almost desert. The grass is short and in scattered clumps. The trees are small and there are not many of them.

In the third picture you see a kind of grassland that is found where there is more rain. Like most African grasslands it has scattered trees. The trees are acacias, with flat tops. Such trees are found over very large areas of African grassland.

The most important fact to remember about African grasslands is that they are regions of seasonal rainfall. They are lands with rainy seasons and dry seasons. To grow there, plants must be able to live through several months with no rain.

**People south of the Sahara.** You can see on the map on pages 18-19 that the density of population increases toward the south. That is to be expected, for the lands with more rain can support more people. There is another difference in population. As you know, most of the people of the Sahara are Arabs and Berbers, who belong to the Mediterranean branch of the Caucasian race.

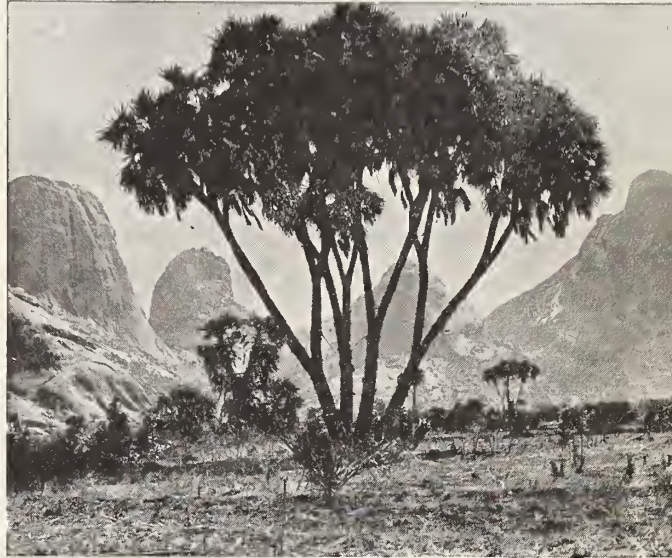
The native peoples of the grasslands are Negroes. The Negroes are the real Africans. Before Europeans began coming to Africa in the age of exploration, nearly all the people south of the Sahara were Negroes. Negroes still make up all but a small fraction of the entire population of the continent south of the desert.

In general, the Africans live in tribes, under chiefs. Although the greater part of the continent is now made up of the colonies of European countries, the chiefs and their tribes still manage most of the affairs of their own everyday living. The tribes differ somewhat in appearance and in language. They differ greatly in ways of living.

As you know, until about five hundred years ago, the Africans were almost entirely cut off from the rest of the world. Even a hundred years ago, large areas in the interior were still unknown to Europeans. Thus the



*Courtesy British Information Services*



*Courtesy British Information Services*



*Ava Hamilton*

If you travel southward from the Sahara, you find that vegetation changes as the rainfall increases.





*Courtesy British Information Services*

**Africans thatching a roof. Can you see the man on the roof reaching for the bundle of grass?**

Africans developed their own ways of living without much influence from the outside. They seldom exchanged any products or ideas with the rest of the world.

**African ways of living.** A few tribes lived mainly by hunting and food gathering. The grasslands of Africa have a greater abundance of wild animals than any other region in the world. Antelopes, zebras, wild pigs, and many other animals were hunted. The rivers and lakes supplied fish. Wild fruits, nuts, and other plant foods were gathered, too.

Only a few tribes depended entirely upon hunting and food gathering. Most Africans were either farmers or herdsman. The land was cultivated with hoes, and many different crops were planted together. In the warmer and moister parts of the continent, crops grow the year round. Seeds were planted at different times during the year, and there was no special time for harvesting the crops. The women went to the gardens each day and gathered that day's supply of food. In the regions with a very dry season, grain was harvested and stored away.

On the good grasslands, African herdsman kept many cattle. Some of the cattle tribes lived almost entirely on milk, with a little meat now and then. They seldom ate any plant foods. Other tribes were both cattle keepers and farmers.

On the poorer grasslands, nomadic herdsman kept goats and sheep. A few animals were kept by farming peoples almost everywhere in Africa. Some chickens, too, were kept on most farms. Camels and donkeys were common in the Sudan.

African homes were simple and suited to the climate. In most parts of Africa, the houses had walls of twigs woven together. Sometimes the walls were plastered with mud. Roofs were thatched, usually with leaves in the forest regions and with grass in the grasslands. Sometimes the walls, too, were covered with leaves or grass. Some tribes commonly made oblong houses, while others made circular houses.

Nearly all Africans lived in villages. In some parts of Africa, most of the villages were made up of two rows of houses on opposite sides of a wide street. In other villages the houses formed a circle. Among the cattle-keeping tribes, villages were enclosed with high fences of thorny branches. At night the cattle were driven inside the fences, where they were protected from lions and other wild animals.

The part of Africa south of the Sahara has little cold weather. Clothing is not needed for warmth. Some tribes wore none at all. Others wore a little, made of leaves, grass, or leather. Some wore robes of bark cloth or of cotton. Bark cloth is made by peeling the fibrous inner bark from certain trees and pounding it until it is soft and firm.

**African handicrafts.** Houses had little furniture. The beds were usually mats laid on the floor. Women made pottery bowls, jars for water or milk, and kettles for cooking. The quality of the pottery depended upon the skill of the women and the kind of clay they could get near their village.

Many men were skilled woodworkers. They made stools, decorated with carving, spear shafts, bows and arrows, knife and hoe handles, small statues, and drums.

Among the Africans there were skilful blacksmiths and other metalworkers. They worked in iron a very long time ago. It is possible that they learned to use iron as early as any people in the world. Their blacksmiths smelted the ore in little clay furnaces and hammered it into hoes, spearheads, knives, musical instruments, and ornaments. Some tribes also had workers in brass, copper, silver, and gold.

**A changing Africa.** You have seen a little of what African life was like. Of course, it varied from place to place and from tribe to tribe. That was natural when people had so little contact with one another, so little chance to exchange goods and ideas. Some tribes were very primitive. This means that their ways of living were simple and crude, and they depended directly upon their environment for food and shelter. Other tribes had reached a high level of civilization.

How much change have Europeans brought about in African customs and ways of living? For a long time the Africans have been growing a number of plants that are native to America. It is believed that the Portuguese traders brought these plants to Africa from their American colonies. The plants spread from tribe to tribe until they were grown wherever climate and soil were suitable.

Corn is probably the American plant that has been of greatest importance to Africa.

Most Africans do not raise it for sale or for animal feed. Each family raises only enough for its own needs. The women grind or pound it into meal and make a kind of porridge or mush. Corn is eaten green, too.

Cassava and peanuts are probably next in importance to the Africans. Another name for cassava is manioc. It grew originally in the Amazon region of South America. Sweet potatoes and tomatoes are other American plants introduced into Africa long ago.

As you read the pages that follow, watch for other evidences of European and American influence on Africa. It is the clue by which you can understand Africa of today.

## MAPPING A TRANSITION REGION

From the maps in this book, draw the following lines on an outline map of Africa. Do not continue the lines east of the Nile.

1. In one color, draw the 10-inch and 20-inch rainfall lines. The space between them is the 10- to 20-inch rainfall region.
2. In a second color, draw the line that marks the edge of the frost-free region.
3. In a third color, draw a line for the northern edge of the grassland region.
4. Except in a few oases, the Sahara has fewer than two people to the square mile. Parts of it have no people at all. Use a fourth color to draw a line that stands for the southern edge of this great desert region of very sparse population.

Your map now shows a tangle of lines. They cross one another many times and make a bright band of color across your map. The area indicated by this band of color is the transition region between the Sahara and a very different Africa to the south of it.

## LIVING IN CENTRAL AFRICA

The part of Africa lying in the low latitudes is usually called Central Africa. It has no exact boundaries, but for convenience you may think of it, in general, as the area that lies between the parallels of 17° north latitude and 17° south latitude.

For purposes of study, Central Africa may be divided into four large regions. You can find them on your own regional map. First, there is the Sudan, the belt of grassland just south of the Sahara. South of it are two equatorial regions. The western region is





*Courtesy British Information Services*

A Sudan farmer works in an irrigated cotton field. Water for irrigation comes from branches of the Nile.

equatorial lowland covered with forest. The eastern is equatorial highland. It is grassland. South of these two equatorial regions is another region of grassland.

## The Sudan

You already know something about the Sudan, for it is the grassland region you read about earlier. The Sudan is not a political division and it has no boundaries. Sudan is just a convenient name that people have used for a long time.

**Farmers of the eastern Sudan.** The first picture on page 197 was taken in the eastern Sudan. If you were to follow the Nile upstream from Egypt, you would come to this region. Turn to the physical-political map on pages 30-31 and find Khartoum. This city is built on a point of land where two branches of the Nile come together. The one to the east is called the Blue Nile.

The Blue Nile flows down from the Plateau of Ethiopia. As you can see from the rainfall map, the highland has heavy rain. Most of it comes in summer. The rains cause a great rush of water to flow down the Blue Nile. It is this water that causes the floods in Egypt.

Find the Sennar Dam on the Blue Nile. The dam provides water for a large irrigated area in the triangle of land between the two branches of the Nile. Cotton is the principal crop of this region. The date palm grows here, as it does in Egypt. Sorghum is the most common grain. The sorghum plant looks like a stalk of corn, but the grain grows at the top of the plant, not in ears. It is a variety of millet. Many smaller kinds of millet are also grown in the Sudan.

Above Khartoum there are many tribes along the Nile. Those on the banks of the Nile must irrigate the land. Toward the south there is enough rain for a little farming without irrigation.

**Drier lands of the Sudan.** Turn to the map of Africa on pages 30-31. Lay your pencil across the map from Lake Chad to the mouth of the Senegal River on the Atlantic coast. You may think of your pencil as the dividing line between a land of nomadic herdsmen and a land of farmers. To the south from this line, farming is the principal occupation of the people. To the north, little farming can be carried on without irrigation. The people here are nomadic herdsmen. The region differs from the desert only in having

more grass and other plants for grazing. Sheep, goats, and camels are kept here.

This region has one famous old town. It is Timbuktu, on the Niger River where it makes its great bend to the north. Here, on irrigated land, is one of the few places where farming can be carried on in the northern Sudan. The principal crops are rice, grown in summer, and wheat, grown in winter.

Timbuktu is an old trading town, the southern terminal of one of the main caravan routes across the Sahara. Here for centuries Arabs in long robes have come on camels to trade with Sudanese Negroes. The Negroes brought their goods by dugout canoes on the Niger.

**Farmers of West Africa.** The land from the Gulf of Guinea northward is usually called West Africa. Most of the farming region of West Africa lies in the grassland, but there are areas of tropical rain forest along the coast. The regions of West Africa are bound together in many ways. It will be easier for you to understand how people live in this part of Africa if you study the coastal region along with the grassland to the north.

In the northern part of the Sudan are people who were craftsmen and traders long before the first Europeans came to Africa. Their living centred around cities of mud-walled houses. These cities are still trading centres of the Sudan. Timbuktu is one of them. Another is Kano, in northern Nigeria. The craftsmen of Kano still carry on their old trades. They are famous for their cotton cloth, dyed blue with indigo, and they are skilful workers in leather and metals.

There are still tribes in West Africa living as simply as the people in the picture on this page. The picture was taken in northern Nigeria. The largest building is the home,



*Courtesy British Information Services*

**A primitive village, untouched by European ways of living.**

the smaller ones are used for storing grain. The walls are made of mud, and the roofs are thatched with brown grass. Think of the buildings, the bare ground in front of them, and the rocky hills beyond as brick red in color. Red is the color of many African soils and rocks.

The people shown here wear few clothes. They build their homes from materials that are all around them. They grow food for themselves, but they grow nothing to sell. They have almost no contact with Europeans and live almost as simply as their ancestors did before Europeans came to West Africa.

Nearer the coast lived people who might be considered typical African farmers; that is, the description of African farmers in general, on page 198, fits them almost exactly. Ways of living in this region have changed greatly. The people have taken over more of modern industrial civilization than any other large group of Africans. They are the ancestors of most Negro Americans.

Most of West Africa is controlled by either Britain or France. Men sent out by the governments of these countries have taught the Africans better methods of farming and have introduced new crops. Some of the new crops and methods have been introduced



to give the Africans a better supply of food. But Europeans have also taught the Africans to grow crops for sale. Europeans benefit in two ways from such crops. The tropical products can be bought as raw materials for European factories, and the Africans buy European goods with the money they get.

Cotton is one of the most important of the crops grown for sale. We usually speak of such crops as commercial crops. The West Africans grew a little cotton for their own use before the Europeans came. Now they grow much more of it. European experiment stations find the varieties best suited to the environment and then try to improve them.

Vegetable oils are another valuable product of West Africa. Oils and fats are among the most necessary materials in the world. Oils are liquids such as olive oil. Fats are solids such as butter and lard. Oils and fats are needed in everyone's diet. They are necessary raw materials for making soap, glycerin, and many other products.

Most of the vegetable oils in the world come from seeds and nuts. Peanuts are one very important source of oil. They grow especially well in the drier grasslands of the northern Sudan. Kano is one of the great marketing centres for the African farmers

who grow peanuts. Many trees in West Africa produce nuts and seeds that are rich in oil. Most important is the oil palm. In the drier grasslands the shea tree grows wild. A solid fat called shea butter is obtained from its seeds.

Cacao beans are a third commercial product of West African farms. They grow on cacao trees and are the source of cocoa and chocolate. Like so many other African crops, this tree came from America.

Most of the commercial crops of West Africa are grown by the Africans on their own farms. In many cases they are planted among the millet and yams, as Africans have always planted their crops. The African farmer usually sells his cotton and his bags of peanuts or cacao beans to a European trader. Most products are exported as raw materials, with only a little preparation.

Some products cannot be grown satisfactorily by African methods of farming. They must be produced on a larger scale if they are to pay. Such crops are grown on plantations managed by Europeans. Rubber is one crop usually produced on plantations.

As much as possible, the governments in charge of the West African colonies try to keep production in the hands of the Africans

themselves. They are trying to help the Africans become part of world civilization as quickly as possible. The Africans were left far behind because they were cut off from the rest of the world. Now they are catching up rapidly, wherever modern transportation has reached them. There are steamboats on the rivers. Railroads reach far into the country, and trucks carry products over good motor roads. Still there are tribes that are almost out of reach.

Two great needs of the Africans are education and better protection for their health. Improved farming methods bring better food, and better food brings better

A cargo of peanuts awaits transfer from barge to steamer.

*Courtesy British Information Services*



health. Government health departments are also trying to prevent disease. They are teaching people better sanitation. They are trying to get rid of insects that carry disease and are providing doctors and hospitals.

The children in the picture on page 201 will probably never go to school. The young people in the picture on this page are students in a college where they will get a fine education. Only a small fraction of the children in West Africa will get as good an education as these students are getting. On the other hand, only a small fraction will have no education at all. In the towns and in the villages of the more progressive tribes there are schools. The boys and girls are learning to read and write and to do arithmetic. They are learning about the rest of the world. Most important, perhaps, they are learning to be better farmers, better housekeepers, better workers in many trades.

## Equatorial Lowlands

Ask people who have not been studying Africa what they think about when they hear the name of the continent. The chances are that many of them think of hot, steaming forests. In fact there is only one such region in Africa. It is a large region, but it occupies only a small fraction of the huge continent of Africa.

**What the maps show.** On the vegetation map, pages 16-17, find the region of tropical rain forest. As you can see, it lies along the equator and extends westward in places along the coast of the Gulf of Guinea. The rainfall map shows that this region has more than 60 inches of rain in a year. Parts of it have a rainfall that is heavier than 60 inches by a great deal.

Turn to the physical-political map of Africa on pages 30-31 and find the altitude of the forest region. The tropical-forest region is almost entirely surrounded by much higher land. Even along the ocean there is some higher land except where rivers break



*Courtesy British Information Services*

College students will help improve West Africa.

through. Most of the tropical-forest region is included in the valley of the Congo River and its tributaries. The name Congo Valley is sometimes used for the region. More often it is called the Congo Basin.

Although the equator cuts across the Congo Basin, the temperature of this region is not extremely high. The weather is never so hot as it is during the summer near the Sahara. The fact to remember about temperature along the equator is that the *range* is small. The range is the difference between the highest and lowest temperatures.

During most of the year there is a thunderstorm every afternoon and evening. Then the rain falls in a downpour. Most of the heavy rainfall comes in such storms. Even during the drier part of the year, there is usually a rain every two or three days.

The vegetation map shows a large area of unbroken tropical forest in the Congo Basin. Early explorers thought this forest area larger than it really is. They followed the rivers. As you see, there are ribbons of forest along the rivers far beyond the region of solid forest. On the higher land between the rivers, your vegetation map shows grassland with scattered trees.



The two pictures on this page will give you an idea of how the Congo Basin looks. The first picture shows thick forest. This forest is so dense and dark that photographs can be taken only where there is an opening. Here the break is caused by a stream. A bridge supported by ropes crosses the stream. The elephant in the second picture is in one of the drier areas between the rivers.

**Farmers of the Congo Basin.** On the map of Africa, pages 30-31, find the names of the two large political divisions that occupy most of the Congo Basin. As the names indicate, one is a colony of Belgium and the other of France. Under the governments of these countries, the region has been developed in much the same way as West Africa. Ways of living are changing in these colonies.

Before the Europeans came, the people of the forest did not do so much farming as the West Africans did. They hunted, fished, and gathered foods that grew wild in the forest. Now most of these people too have become farmers. Bananas, cassava, and corn furnish

most of the food for the people. They grow other grains and vegetables also, including sorghum, peanuts, tomatoes, and beans.

Very important to the people of the tropical forests are oil palms, which grow wild among the other trees. The fruit and seeds of this palm tree supply oil. The trunks are used in building, and fibre is obtained from the leaves.

Palm nuts from the oil palm are now the leading commercial product of the forest region. The Africans still gather them from wild trees, but they also plant the palms in their gardens. The picture on page 205 shows how the oil palm looks. The man is cutting away some of the huge, stiff leafstalks so that he can reach the clusters of fruit.

The raffia palm is another useful tree. It too has fruit from which oil can be pressed, but fibre from the leaves is the most valuable product. Rattan palms furnish fibre and light, flexible strips of wood. Along the coast coconut palms grow. The meat of the nuts is dried and the copra shipped to Europe, where the oil is pressed out.

Natives walk along a swinging bridge which crosses one of the tributaries of the Congo in the dense forest of the Congo Basin. In a drier part of the same region an elephant roams through dry grasslands.

*Photos by Ava Hamilton*





Besides palms, other forest trees furnish valuable products. A gum called copal, used in varnishes, is collected from several kinds of trees. Nuts from the cola tree are used in making drinks that are popular in America and Europe. Rubber comes from a number of different kinds of trees and vines. Coffee trees grow here. Cotton and cacao are the most important commercial crops brought to Africa by Europeans.

**Improved transportation.** Products could not be exported from the Congo Basin without good means of transportation. The rivers have falls and rapids, but between these interruptions there are long stretches of navigable water. One of the first steps in improving transportation was to build railroads around all the places that were not navigable. On the map of Africa you can find some of these short railroad lines running beside the rivers. Longer railroad lines were built later to save transferring goods between boats and trains, to connect waterways, and to cut off some of the great curves made by the rivers. New motor roads have been built to carry products by truck to the rivers and railroads.

**Progress in the Congo Basin.** As in West Africa, the people of the tropical-forest region now have many village schools in which children learn the things you learned in your early years at school. Then there are a few higher schools. Some of the schools train young men and women to be doctors or nurses. When they graduate, they help bring better health to the people. European doctors and the hospitals built by Europeans also help. Better food, money to spend on homes and clothing, and better education all help to make living pleasanter and safer.

## Highlands of East Africa

Turn back to the relief map on page 189 and find the highlands of East Africa. They form a region of high plateaus. The surface



*Courtesy British Information Services*

**Picking oil-palm fruit on an equatorial plantation.**

is very uneven. Most of the region is between 2000 and 5000 feet high, but large areas rise still higher. Deep valleys cut through these higher lands and huge snow-capped mountains tower above them. Near the centre of the plateau lies Lake Victoria, second-largest lake in the world.

**Vegetation and climate.** The vegetation map shows that most of East Africa is covered with the same kind of vegetation as is found in the Sudan. It is grassland, with scattered trees. The third picture on page 197 was taken in this region. The rainfall map shows that the climate becomes drier toward the east. A wide band of desert begins a little south of the equator and follows the coast northward.

The rainfall is seasonal. It follows the shift of the sun north and south with the seasons. The part near the equator has two



rainy seasons a year, while the regions to the north and south have only one. From your knowledge of geography, you should be able to explain why this is true.

**Coastal regions of East Africa.** If you were to travel to East Africa by ship, you would probably land at either Mombasa or



*Courtesy British Information Services*

**Fishing in Lake Victoria.** All over Africa people fish to add to their own food supply.

**Native picking cloves on the island of Zanzibar.**

*Margot Lubinski*



Dar es Salaam. Here you would find a narrow strip of lowland along the coast. The two ports were Arab trading towns before the first Europeans came. Products from the interior of Africa were brought here for sale.

Many Arabs still live along the coast and on the island of Zanzibar. There are also many Europeans and many people from India. The larger part of the population is Negro, however, made up of people of many tribes who have moved to the coast.

For a long time large areas here have been laid out in plantations. On the plantations three products are most important. These are bananas, coconuts, and spices. The whole island of Zanzibar, a few miles off the coast, is said to smell of cloves. About four-fifths of the world's supply of cloves comes from this island. Cloves are the dried flower buds of the clove tree.

You learned that farther north a band of desert stretches along the coast. Like the Sahara, this desert strip has less than 10 inches of rain in a year. There is a difference, however, that the rainfall map does not show. This desert area is part of Central Africa. Its rain comes in summer, not in winter. It is not entirely without vegetation. Most of it is desert grassland. The land is fairly well covered with short bunch grass and is good pasture for sheep, goats, and camels. Farming is carried on only where streams bring water from the highlands.

**Plateau region.** Did you notice the lions in the picture on page 197? East Africa has more interesting wild animals than any other region in the world. If you have ever been to a zoo or a circus, you know some of the animals that are at home in East Africa. The next time you see an elephant, look at his ears. African elephants look like the one in the picture on page 204. They have much larger ears than Asiatic elephants. They are not so common in circuses because they are harder to tame than Asiatic elephants.

Many tall giraffes, dozens of different kinds of antelopes, and beautifully striped zebras

wander over the grasslands. Wart hogs, a very ugly kind of wild pig, scuttle backward into their burrows when alarmed. Huge rhinoceroses bask in the sunshine.

With so many grazing animals, meat-eating animals are plentiful. Lions follow herds of grazing animals or wait for them at streams and water holes. Leopards and other animals of the cat family, hyenas, and wild dogs are found here. Birds, including the huge ostrich, are abundant.

**People of East Africa.** The native people of East Africa are Negroes. They belong to many tribes. You might think these people would make a living by hunting. They have always hunted, but they do not count on wild animals to supply their food. Before Europeans came, there were two ways of making a living in this region, cattle keeping and farming. The same tribes did not do both of these things for a living.

Some of the tribes that keep cattle live almost entirely on milk. Their ways of living centre around their cattle. Their villages are built around an open space into which the cattle can be driven at night for safety from wild animals. During the day the men take the cattle out to pasture. The women make butter. Children learn the work they will do when they grow up.

It may surprise you that people can live on milk alone. They drink it fresh or sour and make it into butter. Sometimes they eat meat, but not often. To them cattle are wealth, and they do not like to kill them for meat. Most of the people do not eat grain, vegetables, or fruit at all.

Some parts of East Africa are too dry for farming without irrigation. In such places there are only herdsmen. Some places are even too dry for cattle, and there people keep sheep and goats. Most of the region, however, has enough rain for farming during the rainy seasons. The kind of farming carried on here and the ways of living of the farming tribes are much the same as those you have already seen. The parts where



*Courtesy British Information Services*

Although Mount Kilimanjaro is almost on the equator, its cold snow-capped peak is like the Arctic regions.

there is just enough rain for crops are much the same as the parts of West Africa where there is just enough rain for farming. In the wetter parts, as in Uganda, just north of Lake Victoria, the crops are much the same as those of the tropical rain forest.

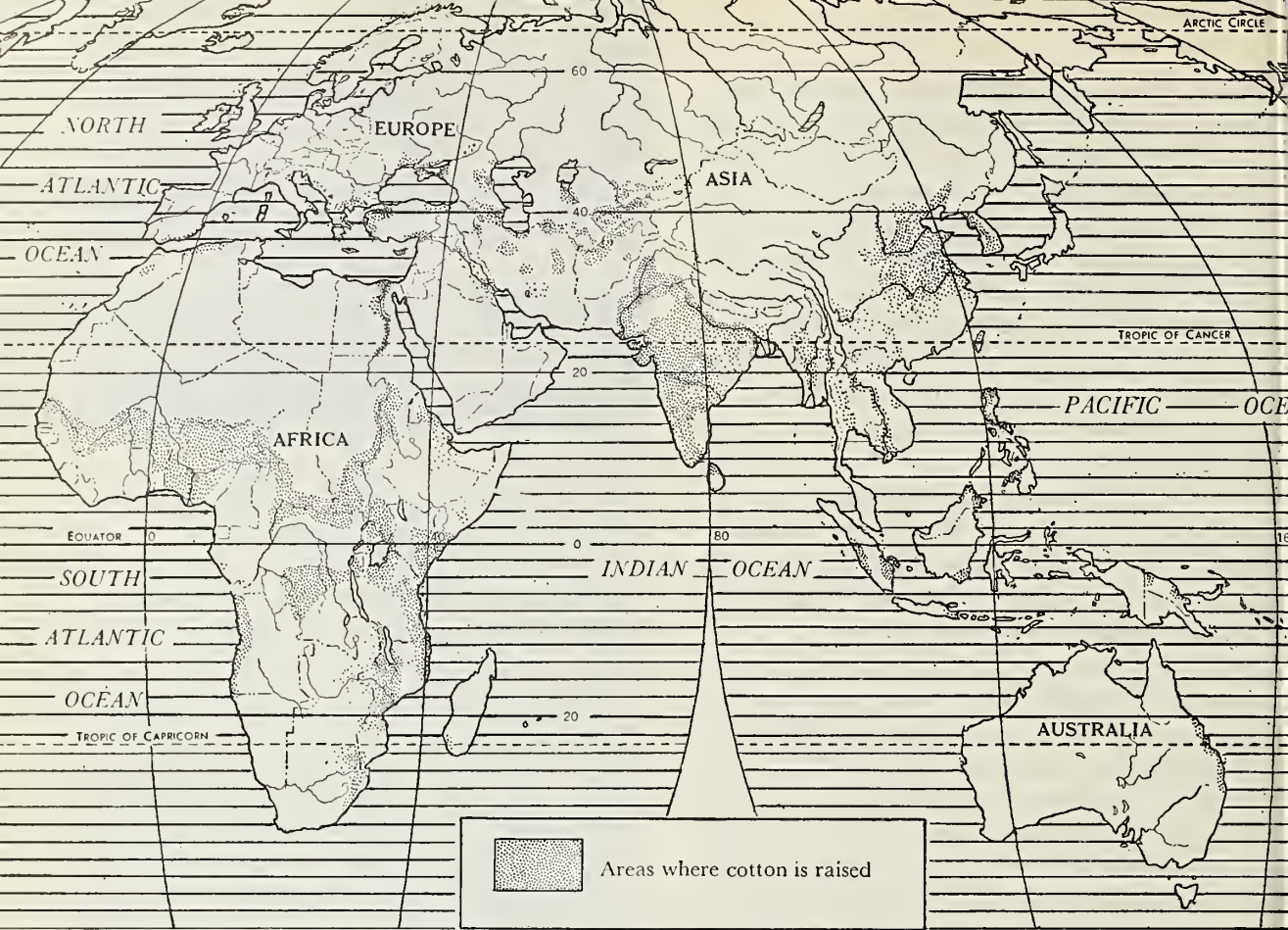
**The higher regions.** The map on pages 30-31 shows the higher regions that rise above the level of the plateau. Find them on the map on page 189. At the north are the high mountains and plateaus of Ethiopia. Another high region stretches south along the boundary between Uganda and Kenya, across Kenya, and into Tanganyika. Still another lies west of Lake Victoria.

The highlands in Ethiopia have very heavy rainfall in summer. As you know, this heavy rain causes the summer floods of the Nile. It also gives Ethiopia a forest region. There is much good farm land here.

Ethiopian crops are like those grown in other parts of Central Africa. The people keep cattle, sheep, and goats. For the most part they eat the products of their farms, selling the surplus in the nearest town.

The two regions of higher land that lie farther south have great differences in surface and climate. In the picture above, you are looking toward Mount Kilimanjaro across dry, level plains. The mountain is many, many miles away, and its base is hidden by mist and clouds. High above the





A map showing where cotton is grown in lands overseas.

clouds rises the great, snowy peak. Below the snow line there is a belt of grass and shrubs. Then there are forest belts, with the kinds of trees that grow in the middle latitudes. The lower slopes and the foothills are good farm land. There the Negro farmers grow the same crops as those raised in the rest of Africa, and their ways of living are much the same as those of other African farmers.

The farmers of the highlands have an advantage over most other farmers. Crops can be grown the year round. All tropical and subtropical crops will grow except a few that require very high temperatures, such as the oil palm and rubber and cacao trees. It is warm enough for bananas and sugar cane. At the same time the climate is not too hot for the growing of vegetables and grains that are at home in the middle latitudes.

**Changes in East Africa.** Changes are coming to East Africa, just as they are to West Africa and to the Congo Basin. Most of East Africa is controlled by the English. Many years ago they began to encourage the African farmers to grow cotton, because cotton was needed in the English cotton mills. They began in Uganda, around the north end of Lake Victoria. This is a densely populated region, and it had a well-organized government under its own rulers. This government has continued under the English, who only keep the peace, try to improve the health of the people, and advise them about how to improve their own ways of living.

The people of Uganda were already raising cotton in their gardens. The English supplied them with seeds of better varieties, gave them plows, taught them to grow large fields

of cotton, and bought all the fibre produced. You have found cotton in several other parts of Africa. The map on page 208 shows the many regions in which it is grown.

East Africa is a large area and its people are scattered. Progress has been slower than in the more densely populated regions of West Africa. Ways of living are being improved, however. People of the cattle tribes are learning to take better care of their animals and to keep better breeds than the native African cattle. Farming in East Africa is changing just as it is in West Africa. The Africans are learning better methods, and they are learning to grow new crops. There are schools where African boys learn scientific dairying and farming. When these boys go back to their own tribes, their neighbors will learn from them.

People find it harder to live and work and stay in good health in low latitudes than in middle latitudes. The Africans, whose ancestors have lived in equatorial Africa for thousands of years, are at home in the climate. With good food and a knowledge of how to prevent disease, they can live well in Central Africa. If Central Africa is to come fully into our world civilization, the development must come about through the Africans themselves. Europeans and Americans can help them get started only by passing on to them the knowledge they need.

A few Europeans do live comfortably in the highlands, however. Some of them live in towns. The largest European town in East Africa is Nairobi, capital of Kenya. The Europeans in the towns are merchants, doctors, teachers, government officers, radio operators, mechanics. They follow these or other occupations that they followed at home.

On some of the higher lands are settlements of European farmers. The farms are usually large plantations, with many hired African workers. The owners have brought cool-climate crops, such as wheat, barley, oats, potatoes, flax, and fruits, to the farms.

Other crops are grown for export. The picture on this page shows one of these crops.

The workers seem to be picking daisies. That is exactly what they are doing, but the daisies are a special kind, used in making insect poison. Coffee, tea, sugar cane, and sisal are other plantation crops. Sisal is a Mexican plant that can be grown successfully only in a few places. Parts of East Africa are well suited to this valuable fibre plant.

## Mining Regions of Central Africa

You can see on the vegetation map that grasslands with some trees stretch across Africa at about 5° south latitude. Bands of tropical forest reach out into these grasslands along the rivers. The vegetation is much like that of the Sudan and East Africa.

**Mines and minerals.** In one important way parts of this area differ from other African regions you have studied. There is a great mining region extending southward

**Daisies, great fields of them, are grown for export in East Africa. What is made from them?**

*Courtesy British Information Services*







*Courtesy Union of South Africa Government Information Office*

A copper mine at the southern end of the mining region.

from the southeastern part of the Belgian Congo across Northern Rhodesia and Southern Rhodesia.

The most widely distributed mineral is copper. The picture above shows a copper mine in this region. It also gives you an idea of the kind of vegetation commonly found. The strange-looking tree is a baobab. Baobab trees are scattered over nearly all of the dry grasslands. They have large trunks, which often become hollow. The Africans use the hollow trunks as cisterns, filling them with water for the dry season.

The mining region also has deposits of lead, zinc, chromium, and vanadium. There

is coal that can be used for smelting the ore. Railroads run to ports on the eastern, western, and southern coasts of the continent. These are the longest railway lines in Africa.

The southwestern Belgian Congo has radium and uranium mines. It is one of the few parts of the world in which radium ore is found. A little mining is carried on in other parts of Central Africa. Most of the area has not been thoroughly prospected for valuable minerals, however.

### COMPARISONS IN SIZE

The countries of Africa may be much larger than you think. In the problems below they are compared with some of the provinces in Canada.

Look up the map of Africa, on page 30, and find out which are the British colonies between 17° N. and 17° S. List them, and their areas (page 369). List the Canadian provinces, with their areas (page 370). Then fill in the blanks in these problems.

1. Kenya, Uganda, and Tanganyika are about equal to a central province, xxxxx, a Prairie Province next to it, xxxxx, and one of the Maritime Provinces, xxxxx.

2. Northern Rhodesia is only a little larger than another Prairie Province, xxxxx, and another of the Maritime Provinces, xxxxx.

3. Nigeria and the Gold Coast roughly compare with a central province, xxxxx, plus our three smallest provinces, xxxxx, xxxxx, xxxxx.

## LIVING IN SOUTH AFRICA

The southern end of Africa is called South Africa. There is no sudden change in the natural environment to tell you where South Africa begins. The parallel of 17° south latitude is sometimes used. Some people use the Zambezi River as a dividing line between Central Africa and South Africa.

### A Transition Region

If you wish, you may show these possible dividing lines in color on an outline map of Africa. Add the 40-inch rainfall line, the 20-inch rainfall line, and the line that marks the southern edge of the frost-free region to

your outline map. Your colored lines show about where the transition region lies in South Africa.

**A wide grassland.** Except along the sea-coasts, this whole region is grassland with scattered trees. As in other grasslands you have studied, the plants must be able to live through a long dry season. This grassland differs from those of East Africa in having only one rainy season in the year.

Most of the people of this grassland region are Negroes. They depend mainly on farming for a living, but they also keep animals, hunt, and gather wild products. Like the other grasslands of Africa, this region has many wild animals.

Crops are grown mostly in summer. The winters are warm enough for many crops, but they are too dry. Sorghum, smaller varieties of millet, and corn are the principal crops.

A few Europeans live in this grassland region. As you know, there are mines in parts of the regions, and lumbering is carried on in places. Some of the Europeans manage the mines and lumbering operations. Most of the European farmers raise cattle. Their land is used chiefly for pasture or for forage crops, especially corn and sorghum.

**Drier lands.** Turn to the rainfall map on pages 12-13. You can see that southwestern Africa has a large area with less than 10 inches average rainfall. It is about as far from the equator as the Sahara in North Africa. On the Tropic of Capricorn is a region named the Kalahari Desert. Most of it is not in the driest area, but in one with a rainfall of 10 to 20 inches.

Names are sometimes misleading. Most places have been named by people who are not geographers. From the name you might think that the Kalahari is the driest and most barren part of South Africa. From your maps, you can see that it is not.

The Kalahari is dry, but it has a little grass, with many bushes and other plants. The Kalahari is the home of the Bushmen.

Most scientists who study races think the Bushmen are not true Negroes. They are small people, with yellowish-brown skins, and they live by hunting and by gathering wild food. The true Negroes who live here make a living by keeping cattle, sheep, and goats, also by doing a little farming. They grow chiefly corn and sorghum.

## Lands of European Settlement

When Portuguese traders began sailing around Africa to India, they needed a place to stop on the way. The journey was a very long one for the little ships of four hundred years ago. A Portuguese settlement was founded at the mouth of the Zambezi. The little settlement grew to be the present Portuguese colony of Mozambique.

Dutch ships also sailed around Africa to the East Indies. They too needed a stopping place on their way. A Dutch colony was founded at Capetown, near the Cape of Good Hope. The settlers grew wheat and vegetables to supply the Dutch ships. More and more settlers came, spreading inland. English settlers came later. At first, settlers of the two nationalities did not get along well together. After many quarrels, the English took control of the Dutch areas. The separate colonies were joined to form the Union of South Africa.

Today the Union of South Africa, like Canada, is a Dominion of the Commonwealth of Nations. It carries on its own government as a fully independent country, but it is closely associated with Great Britain and with the other Dominions of the Commonwealth.

**A Mediterranean region.** How far from the equator is the southern tip of Africa? What other part of the continent is about the same distance from the equator? The southern coast of Africa, like the northernmost strip of coast, is a region with a Mediterranean climate. Nearly all the rain in this region comes in winter. The temperature is





*Courtesy Union of South Africa Government Information Office*

**Grapes and other fruit in South Africa. What other part of Africa has a Mediterranean climate?**

always mild. Streams coming down from the mountains back from the coast are used for irrigation.

Wherever in the world there is a region with a Mediterranean climate, products are much the same. As you might expect, then, the region around Capetown is famous for its oranges, grapes, and other fruits. Some of the fruit is dried in the hot summer sunshine and some is made into jam. Fresh fruit and vegetables are sent in refrigerator ships to England and even to North America.

Can you think of a reason why America and England should be good markets for fresh fruit raised in South Africa? When is it summer in South Africa? What season is it in England when it is summer in South Africa? Most of the exports from this region are shipped through Capetown.

As in Mediterranean regions you have studied elsewhere, wheat and other grains are grown at the southern tip of Africa. They are usually winter crops. Sheep and cattle graze on the drier hillsides.

**The eastern coast.** The climate of the eastern coast of South Africa is somewhat like that of Florida. A region of tropical and subtropical products extends northward from Durban. It includes the narrow coastal lowlands as far as the Zambezi Valley.

The climate is warm the year round. Summer has more rain than winter, but there is no dry season. As you can see from the rainfall map, the annual rainfall is from 40 to 60 inches for most of the region.

On this narrow strip of plain, sugar-cane and banana plantations stretch for miles and miles. Cotton, sisal, pineapples, tea, vanilla, and corn are grown also.

Plants producing oil are of great importance. There are groves of coconut palms and fields of peanuts. Castor-bean plants grow to the size of trees. Castor oil is made from the seeds. Cashew nuts also are grown for oil. These are the same delicious curved cashew nuts you have no doubt often eaten.

The east coast of Madagascar has even more rain than the east coast of the continent. Turn to the map on pages 16-17 to find the natural vegetation. It is the only region in East Africa with heavy forests. Tropical crops are grown here, as on the mainland. Rubber, copal, and raffia are forest products from this region.

**South African plateau.** Compare the relief map on page 189 with the physical-political map on pages 30-31. They show you that South Africa has only a narrow



strip of lowland along the coast. The rest is a high plateau.

Your maps show the mountain range called the Drakensberg along the eastern edge of the plateau. On the side toward the sea, it rises abruptly. On the west side, it slopes gently to the plateau, which is almost as high as most of the mountain region. The Drakensberg range is really only the raised edge of the plateau.

The plateau is a grassland region. Most of it is very dry grassland, becoming drier toward the west. At this latitude the winds are usually from the east. They cannot bring much rain to the plateau because they must rise over the Drakensberg before they reach it. They lose most of their moisture on the eastern slopes of the mountains.

The drier western part of the plateau has a very small population. Except where it is irrigated, it can be used only as grazing land. Even for that purpose, it will not furnish feed for many animals and so cannot support many people.

The eastern part of the plateau is excellent grazing land. It is covered with tall grass. This is one of the great sheep-raising regions of the world. The raising of cattle, horses, pigs, and poultry is important, too. Crops are chiefly corn, sorghum, and hay, grown as feed for the animals.

**Living in South Africa.** On this page is a picture of Johannesburg, largest city in South Africa. It looks just like a European or an American city. You could live there without having to make any important changes in your ways of living. The Union of South Africa is thoroughly Europeanized; that is, it has become like Europe in ways of living. The land is divided into farms. There are roads, railroads, and towns. The people wear European clothes and eat Euro-

pean food. Even the native Africans who live there have, for the most part, adopted European ways of living. Most of them work on the farms of the Europeans, on the railroads, or in mines and factories. Some of them drive trucks. In short, the natives of modern Africa have learned to do all of the many kinds of work that people do in Europe or in America.

## South African Mines

In spite of all the farm and animal products the South Africans have to sell, their greatest wealth is in minerals. Gold and diamonds draw the settlers inland. They account for the spots of dense population on the plateau and for the growth of some of the largest cities.

**Gold mines.** More gold is mined in South Africa than in any other region in the world. Most of it is mined in a range of hills called the Witwatersrand, or The Rand, near Johannesburg. To get the gold, large quantities of rock are mined, crushed by machinery,

**The range of hills called The Rand, from which gold is mined, stands at the very edge of the city of Johannesburg.**

*Courtesy Union of South Africa Government Information Office*





and washed to separate the small particles of gold from the rock.

Johannesburg, shown in the picture on page 213, owes its growth almost entirely to the gold mines. It is the largest city in Africa outside of Egypt. You can see in the picture that one section of the city has many large, modern buildings. You may think of it as typical of the differences between South Africa and the rest of the continent.

**Diamond mines.** Diamonds are more plentiful in South Africa than in any other part of the earth. For many years the world's largest diamond mines have been those at Kimberley. The diamonds are scattered through a hard mass of material which was once lava. The rock is dug out of the old

volcano, and is crushed, ground, and sifted by machine. When as much of the dirt as possible has been removed, the remainder is placed on a slanting screen that has been covered with grease. The screen is shaken by machinery. The diamonds stick to the grease, while the last of the dirt is shaken off.

**Other minerals.** The great copper region of Central Africa also extends into the Union of South Africa. South Africa as a whole has not been thoroughly prospected for valuable minerals. There may be many deposits that are not yet known. Even some known deposits of ore are not mined, chiefly because of transportation difficulties. Coal is mined in a number of places and there seems to be all that South Africa is likely to need.

## THE GEOGRAPHY WORKSHOP

Measure on a globe to find out what part of Africa is nearest your own home. What Canadian province is nearest to Madagascar? Which is nearer to Cairo, San Francisco or Edmonton, Alberta?

### I. THE WORLD IN YOUR COMMUNITY

Do you think Africa is important to your own community in any way? Does it have any influence on your own way of living?

You know, of course, that Egypt influenced our whole civilization. On page 39 you read about the early civilization of Egypt and southwestern Asia. To this area we owe the far-away beginnings of our ways of living.

#### *People who have seen Africa*

Many Canadians have gone to Ethiopia and other parts of Africa to help to improve education and farming methods. Many others have gone as missionaries. When these people return to Canada, they are willing to tell about their work in Africa.

A great many war veterans saw service in Africa. Try to find one who will come to school and talk to your class about the part of Africa he saw. Show him what the maps in your book tell about this part of Africa and

be prepared with questions to ask him. How does the country look? How did the climate affect his work? What plants grow wild in the region he saw? What do people do for a living? If they are farmers, what do they raise on their farms?

#### *Products from Africa*

As you studied the geography of Africa, you may have noticed that the names of many of the plants and products seemed strange. Try to learn as much as you can about them. A large dictionary along with your text should help you to understand them. Write down all that you can discover about each of the following: baobab, cacao, cassava, cola, copal, copra, guava, millet, pomegranate, raffia, rattan, shea butter, sisal, sorghum, and yam.

Most African exports are raw materials that must be manufactured before they are ready for use. Except for cloves and a few other products, you cannot buy the exports in the stores just as they left Africa. You cannot make an exhibit of African products, but you can prepare another exhibit that will be just as much fun. Collect manufactured products for which raw materials might have come from Africa. For example, a rubber ball may stand for African rubber.

Beside each article in your exhibit, place a card naming the African material that might have gone into it. You may have, for example, some of the following: a chocolate cream with a vanilla-flavored centre (three African products might have gone into this); a piece of gold jewellery; a bar of soap; a bottle of cooking oil; a clock with luminous hands (the hands are made luminous by just a trace of a material that may have come from Africa); pieces of cotton and woollen cloth; a box of tapioca (if you do not know what tapioca is made of, look it up in a large dictionary); a can of varnish containing copal; a piece of cord made of sisal (the heavy cord called binder twine is usually made of this fibre); a piece of copper wire.

You can make an interesting background for your exhibit with a large outline map of Africa. Label the regions as they are marked on the map on page 189. Attach to the map samples of African products, such as peanuts, cashew nuts, cotton, coffee, tea, cloves, sugar, dates, a strip of rattan, part of a head of sorghum. Put them in the right regions, but do not try to locate them exactly.

#### *Commonwealth countries*

On an outline map of Africa shade in red the parts belonging to the British Commonwealth and Empire. What part has the same freedom as Canada in governing itself? Southern Rhodesia has almost as much control over its own affairs as Canada has.

Of course you know that Canada has two official languages. You have only to look at a dollar bill or a postage stamp to realize that our government uses both the English and the French languages. The Union of South Africa also has two official languages. About two-thirds of the white population speak both languages. Try to discover what the two main languages are.

What did you read on page 211 about the amount of gold mined in the Union of South Africa? How important is gold mining in Canada? The *Canada Year Book* will help you to get accurate information.

## II. TRAVEL IN AFRICA

In reading about Africa, you found the following statements: "In many places the edge of the plateau is so steep that people cannot climb it easily. Rivers

tumble off the edge in stretches of swift rapids"; "Africa has only a few great rivers, and even on these it is impossible to travel by boat from the coast to the interior of the continent"; "The coast line looks smooth and regular"; "Even the river mouths are not good harbors"; "Africa south of the Sahara has little cold weather"; "Beginning along the Atlantic coast of Africa is a desert region so large as to be almost beyond imagination."

All but one of these statements are part of the answer to one of the study guides on page 188. Which study guide do they fit? Which one of these statements should not be included here because it does not fit the study guide?

## III. WHAT YOU CAN READ FROM PICTURES

In the picture below, you are looking down at the Nile from an airplane that is flying very high. The river is the light-colored, irregular band near the centre of the picture. As you look at the picture, you are looking toward the south. The part of the river you see is upstream from Cairo and the view covers about 90 miles.

In the picture, is the river flowing toward you or away from you? Which side of the picture is east and which is west?

The dark band that follows the Nile is the land irrigated from the river. The light lines are irrigation ditches. Some of the fields look light because they have been flooded with water from the irrigation ditches. The irrigated area looks dark because of the vegetation that grows on it. The desert to the east and west looks lighter because it has scarcely any vegetation.

Now turn to the population map on pages 18-19. How does the population along the Nile differ from the population of land to the east and the west? Write a few sentences

*Acme Photo*





telling how the picture explains what you see on the population map. Your first sentence may begin like this: "There is a narrow band of dense population along the Nile because . . ."

#### IV. EUROPEAN INFLUENCES IN AFRICA

In this book you have seen many pictures of scenes in Africa south of the Sahara. Make a list of the scenes that show the effect of European influence in Africa. Make a second list of the scenes that would look just the same if no European had ever come to Africa. If everyone does not agree, discuss the doubtful pictures and let the class decide whether they belong in the first list or the second list.

#### V. USING THE POPULATION MAP

In working out the quiz given below, you will need to use the population map and many other maps. Look up any information you need. Under each number, you are to choose the best one of the three endings given for the incomplete sentence.

1. The population map, pages 18–19, shows a number of areas where no people live. These areas are uninhabited because

- a. scarcely any plants grow there.
- b. they are too hot.
- c. they are covered with swamps.

2. In northern Africa, in the southwest, and in the eastern part, there are regions with fewer than two people to the square mile. Few people live in these areas because

- a. they are extremely dry.
- b. they do not have good transportation.
- c. they happen never to have been settled.

3. Parts of the northern and southern coastal regions of Africa have more people than areas a few miles inland. Which of the following statements tells why?

- a. It is too hard for people to cross the mountains to reach the interior.
- b. On a continent as hot as Africa, people would rather live where they can enjoy sea breezes.
- c. These coastal regions have a better climate for farming.

4. There is a large area of fairly dense population north of the Gulf of Guinea. Which of the following statements does *not* help to explain why there is an area of dense population north of the Gulf?

- a. It has plenty of rain for farming.
- b. It is south of the Sahara Desert and north of the equator.
- c. It has better transportation than most of Africa.
- 5. There is a region of dense population around Lake Victoria. It can be explained in part by the fact that
  - a. rainfall is heavier here than in any other part of Central Africa.
  - b. the region is known to be very good farming country.
  - c. there is no frost in winter.

#### VI. PICTURES TO SORT

Imagine you have the five African pictures listed below. You are to sort them according to region.

1. A grove of date palms, with an irrigation ditch.

2. A herd of cattle grazing. There are a few widely spaced trees in the picture.

3. A small clearing surrounded by tall trees that grow close together. Vines climb over the trees. Oil palms, cassava, and banana plants grow in the clearing.

4. A flock of goats grazing on scattered clumps of grass. One goat is nibbling leaves from a bush. A man wearing long robes is riding away into the distance on a camel.

5. A grove of orange trees on irrigated land. There is a vineyard on a hillside in the background.

Do not try to tell exactly where each picture was taken. You need only sort them according to the following large regions.

- a. A Mediterranean region.
- b. A desert region. Remember that deserts include oases.
- c. A grassland region.
- d. A tropical-forest region.

#### VII. AFRICA IN THE NEWS

Have you seen any articles about Africa in the newspapers lately? Africa does not ordinarily get into the newspapers as often as Europe does, but if you watch for a while you will be sure to find something. When you do, locate the place mentioned as nearly as you can on the maps in this book. Do these maps help you to understand what is said in the newspaper? Does anything else you have learned in this book help you to understand the information included in the newspaper article?



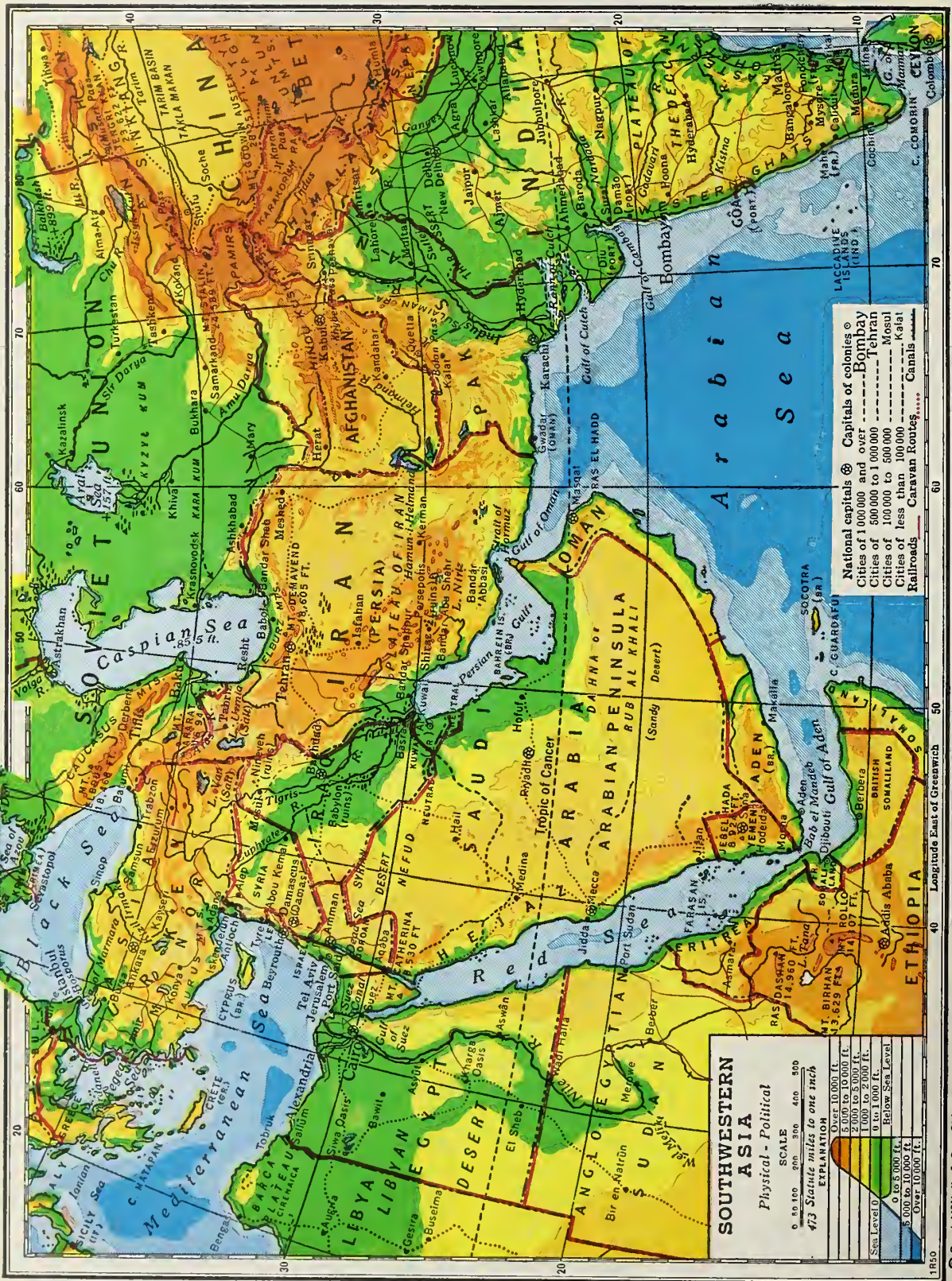
## *Living in Southwestern Asia*

### DRY PLATEAUS AND FERTILE LOWLANDS

Southwestern Asia is a very large area—about as large as Canada's ten provinces. The map on this page will tell you that it is a highland region. Near the centre, however, there is one large area of lowland. Most of southwestern Asia is barren and dry. The only places where enough rain falls for grass and trees to grow are narrow strips along the seacoast and on mountain slopes. The population is sparse. Some people of southwestern Asia are nomads who depend upon their animals for a living. Others live and work in the towns and cities. But most of the people are farmers who live in the coastal lands, oases, and irrigated areas.

Slowly the countries of southwestern Asia are changing. Western ideas and methods are spreading toward the east, making the people of these Asiatic countries more and more like us. Some of them still dress the way their ancestors dressed, but others wear clothes like ours. Caravans of camels and horses are still used, but railroads, highways, and air lines are being developed. Most village houses are built of stone or sun-dried brick, with flat roofs, but in the cities there are buildings much like those in our own cities. Machinery is being introduced both on farms and in industry, and the mineral and water resources are being developed.





A physical-political map of southwestern Asia.



**Old civilizations.** Southwestern Asia, as you know, was one of the homelands of ancient civilization. This region, with its neighbor, Egypt, has a longer written history than any other part of the world.

Southwestern Asia has often been called a “bridge” between the continents of Europe, Asia, and Africa. Years ago, when transportation by land was slow and dangerous, caravans of camels from distant China and India wound their careful way across this region. Ships sailed to the Asiatic shores of the Mediterranean to trade with the merchants of these eastern lands. Armies often tramped across southwestern Asia.

The position of this region is important even today. To hold it, nations fought each other, and the boundaries of its countries were changed from time to time. New nations appeared and old ones disappeared. Some became larger, others smaller. Today they are as you see them on the physical-political map. They are no longer the cen-

tres of trade that they once were. Today the Mediterranean route has taken the place of this region as a great highway of trade.

**Study guides.** Think of this region as an area connecting Europe and Africa with Asia. You will find that many natural conditions in southwestern Asia are similar to those in Mediterranean Europe and northern Africa. As you read, look for answers to the following questions.

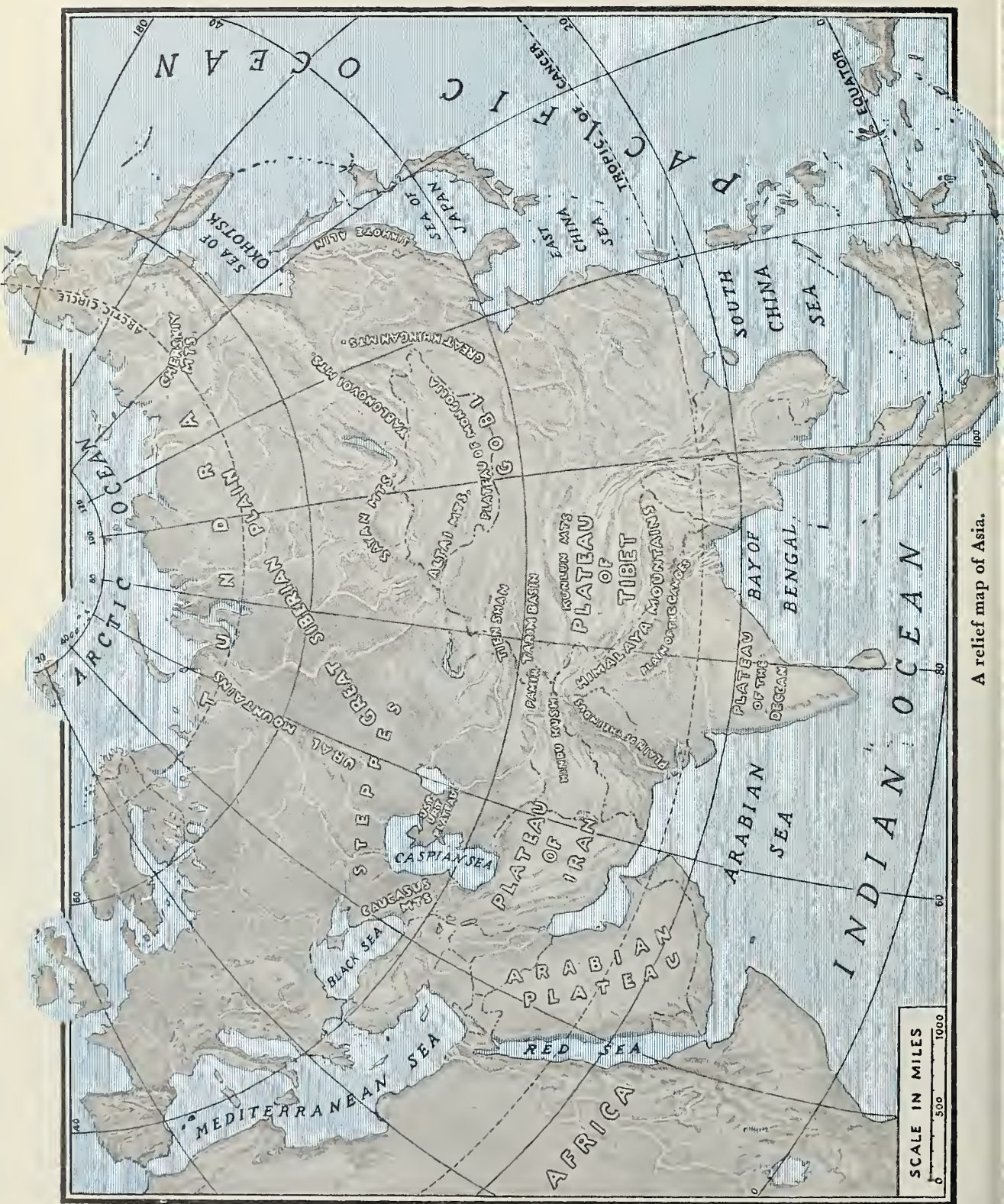
1. What differences in land surface and climate do you find in southwestern Asia? How do these differences influence the kinds of work people do? (I, II)
2. What kinds of manufacturing are carried on in southwestern Asia? (III)
3. Why is such a large part of this region sparsely populated? (II)
4. In what ways is southwestern Asia changing? (III, IV)
5. What kind of trade is carried on? What routes bring this region in touch with other lands? (I)

Turkey, like many other countries, is said to be a land of contrasts. As you read, find an explanation for these different methods of agriculture. Why are changes made slowly?

*Ewing Galloway*







A relief map of Asia.



# WHAT WE CAN READ FROM MAPS

## LOCATING SOUTHWESTERN ASIA

1. Southwestern Asia is made up of the following: Turkey, Syria, Lebanon, Israel, Jordan, the Arabian Peninsula, Iraq, Iran, and Afghanistan. Find these places on the physical-political map on the opposite page. Which country is in both Europe and Asia? What countries are nearest Africa?

2. Southwestern Asia is sometimes called the "Land of the Five Seas." Find five seas that touch the countries listed above.

## THE LAND AND ITS PEOPLE

1. It is easy to see on the physical-political map that southwestern Asia is made up chiefly of highlands. Which country has the most lowland? What are the names of the two large rivers of this lowland?

2. The population map on pages 18-19 will show you which parts of southwestern Asia are most densely populated. What parts of southwestern Asia have very few people? Are these parts highlands or lowlands?

## CLIMATE AND VEGETATION

Perhaps you will find it hard to explain the very sparse population in some parts of southwestern Asia. Other things besides the surface of the land help explain why more people live in certain areas. One of the important influences is climate.

1. Turn to the map on pages 12-13 and tell whether the rainfall is evenly or unevenly distributed over southwestern Asia. What amount of rainfall is there in most of southwestern Asia? What part of Africa does southwestern Asia resemble most?

2. In winter along the west coast, in latitudes from 30° to 40°, the winds blow from the west. Which countries of southwestern Asia have west coasts in these latitudes? These coastal lands have a Mediterranean type of climate.

3. Use the physical-political map to see where the parallel of 30° north latitude crosses southwestern Asia. South of this line the winds are usually from the northeast. As these blow toward the southwest, they pass over land most of the way. The winds are heated and take up moisture. When they reach mountains or the edge of a plateau, they are forced to rise. This cools the air, so that sometimes it rains. What does the rainfall map show about rainfall in the mountains of southwestern Asia?

4. Look again at the map and notice that most of Iraq is lowland. Turn to the population map, pages 18-19. Are the lowlands in Iraq sparsely or densely populated? Use the rainfall map to help explain your answer.

5. In the southeastern part of Arabia there is a region called the Sandy Desert. Find it on the map. Does the map suggest any settlements there?

6. Find the Tropic of Cancer where it crosses southwestern Asia. In the southern part of Arabia, would the sun ever be directly overhead at noon? What kind of summers would you find there?

7. You will recall that temperatures are affected by altitude and moisture. High, dry lands such as those in most parts of southwestern Asia have great changes in temperature from summer to winter, and night temperatures are much lower than day temperatures. Desert people need protection from both heat and cold. What kind of clothing do the natives wear?

## THE PEOPLE AND THEIR COUNTRIES

Southwestern Asia has a great mixture of peoples. Migrating peoples and armies travelling through this region left many permanent settlers behind. The nations that conquered and held these regions brought not only new ideas but also new people.

Arabia, to the south, was little changed. Warriors had no wish to march far into the pathless, foodless desert where only wandering herdsmen or people of the oases lived. The Arabs changed little. They looked the same and lived in the same way. But,



in time, they too began to move out of the desert. They conquered most of southwestern Asia and North Africa. Even today, from the Tigris-Euphrates Valley to the Atlantic coast of Africa, many of the people are Arabs. Among them live some of the earlier peoples of the area and others who came later.

## Where Europe and Asia Meet

For thousands of years Turkey has been the meeting ground of the peoples of Europe and Asia. Study the maps on this page and on page 218. Notice that Turkey is divided between two continents, Europe and Asia, but that most of it lies in Asia. Find the Dardanelles, the Sea of Marmara, and the Bosphorus. These bodies of water connect two seas but separate two continents.

**Turkey in Europe.** Much of Turkey in Europe is barren and produces little. The most fertile part is a narrow strip near the Bosphorus, where the city of Istanbul is located. This was founded by Greek colonists. It was a beautiful capital city when Paris and London were only villages.

Istanbul is one of the busiest crossroads of the world. It is located on the water route between the Mediterranean and Black seas, and many people pass through it when they go from Europe to Asia. A narrow, horn-shaped inlet of the Bosphorus forms a deep and sheltered harbor called the Golden

Horn. People of many different races and nations pass through Istanbul. If you were to wander for one day through the streets and bazaars of this city, you might hear as many as thirty different languages spoken.

Istanbul is becoming more and more like the western cities. But there are still some narrow, noisy streets crowded with people and heavily loaded animals. The most important things in the lives of many of these people are the domed mosques, where they worship, and the bazaars, where they examine goods and bargain with the merchants. Here piles of bright silks, rugs, and slippers attract the eye. There are no large manufacturing industries in Istanbul, but many of the gay and colorful articles sold in the bazaars are exported.

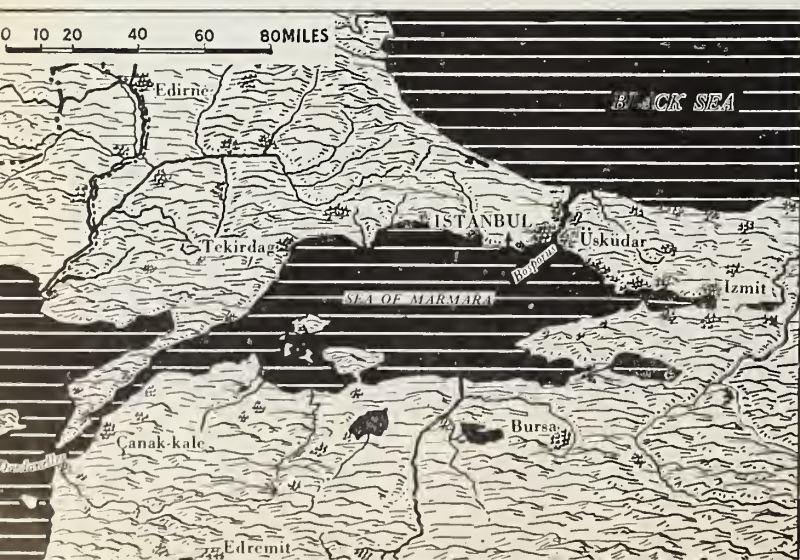
**The coastal lands of Turkey.** Most of the people in Asiatic Turkey live along the western and southern edges of the peninsula. These coastal lands have a Mediterranean climate. The part of Turkey that borders the Aegean Sea is made up of fertile valleys separated by high ridges. You can see on the physical-political map that these valleys open onto the Aegean Sea.

Though the plains are small, most of the people make a living by farming. Wheat is the leading crop, although other grains are grown. Enough wheat is raised so that some is exported. Both figs and raisins are important exports. Cotton is also grown in

this region. Production is increasing and the textile industry of Turkey is growing. Another important export is tobacco. The chief tobacco-growing region is along the coast of the Black Sea, where rain falls during the summer as well as during the winter, and the soil is fertile. Other crops are raised too, but tobacco is the most important.

The most important seaport of Asia Minor is Izmir (also called Smyrna) at the head of an inlet

Entrance to the Black Sea.



of the Aegean Sea. Find Izmir on the map on page 218. It has been a trading centre for centuries. It exports the products of the interior of Asiatic Turkey and receives imports for its use. Goods arrive and leave by boat, caravan, and railroad. Izmir is famous for the manufacture of beautiful Turkish rugs.

**Living on the plateau.** A large part of Turkey consists of a dry, treeless plateau rimmed by mountains. Scattered here and there are salt lakes, and in other places are the shining, salt-crusted surfaces of former lake beds. In winter the plateau is bitterly cold and covered with snow. Dust storms rage during the scorching summer, and some rivers dry up in their beds.

In places, water from oases can be used to irrigate the land. There wheat can be grown, as you see on the map on page 76. The maps on pages 77 and 80 show that other crops can be raised. Most of the land, however, is used for grazing sheep and goats. Turkey is the home of the Angora goat, which has a long, silky fleece called mohair. Much of the wool and mohair is exported, but some rugs and carpets are made in homes and factories.

Transportation on the plateau is difficult and expensive. Steep mountain slopes make travelling hard. Only a few rivers are of any importance to the people of Turkey. These rivers flow from the highlands to the Aegean Sea, and their valleys provide routes which make it easier to reach the plateau.

**Changes in Turkey.** Many changes have taken place in Turkey since World War I. Before that time the country was ruled by sultans. Today Turkey is a republic. The new government is introducing up-to-date methods and modern machinery. Irrigation



*Philip Gendreau*

**Domed mosques and slender minarets and, in the foreground, the busy bazaars and the crowded streets of Istanbul.**

projects are being developed, and roads, railroads, and airfields are being built. Mule trains and oxcarts are gradually being replaced by trucks and freight cars. The larger cities have telephone and telegraph services. Even the alphabet has been exchanged for a simpler one. The old Turkish language was difficult, and many people never learned to read and write. Now more people are receiving some education.

Most of the people of Turkey make a living by farming. Agricultural schools have been founded, and the government has helped the farmers develop their land. Almost all industry used to be carried on in the home. Today textile mills and factories making various products are growing in importance. In the past very little attention was given to Turkey's mineral resources. Now the production is being increased, and several kinds of ore are mined.

At the time the government of Turkey was changed, the capital was moved from





Istanbul to Ankara (Angora). The map shows that Ankara is located on the dry, bare plateau, but it has a more central position than Istanbul. Ankara is being improved by the government, but many old ways are still followed. Farmers plant and harvest crops in primitive ways, and camel caravans move slowly across the plateau.

## Living in Mediterranean Asia

Like Turkey, Israel, Lebanon, and Syria border the Mediterranean Sea. These countries are alike in most ways, but they are under different governments. East of Israel is a country which resembles the eastern part of Syria. It is called Jordan. We shall discuss all these countries together. In this region many of the places mentioned in the Bible are located. Both Christians and Jews are interested, for it was here that both of their religions started.

**The coastal lands.** All along the coast the coastal plains are narrow, but the plains in Syria are narrower than those farther south. The mountains of Syria seem to rise almost directly from the sea, and there are only little strips or patches of lowlands. The mountains of Israel slope gradually down to the sea. You can see on the map on this page that in some places the coastal plain of Israel is more than twenty miles wide. Land there is drier than it is farther north, and the shore is lined with sand dunes.

Soil which has been washed down from the mountains is fertile. In some places the farms are irrigated and intensive farming is practiced. There you would see vineyards, groves of olive and orange trees, patches of tobacco, and small fields of wheat and barley. The farms would remind you of those in other Mediterranean lands.

Many towns and small cities have grown up along the sea, even though the coast line is regular. Of these, Tel-Aviv is the newest

The eastern shores of the Mediterranean.



and one of the largest. It was made to order and was planned by the Jews as a model community. Modern methods and machinery have been introduced, and the concrete and glass buildings of Tel-Aviv are very different from the buildings of Israel's older cities. Although it started as a suburb of the old city of Jaffa, Tel-Aviv rapidly grew into a modern industrial port. It has a new, artificial harbor, but only small vessels can use it. Large ships must anchor some distance from shore to transfer passengers and goods to or from smaller boats. The boats which transfer goods are called *lighters*. The transferring of goods to or from larger boats which cannot come to the shore is called *lightering*. Citrus fruits, which are Israel's biggest export, are shipped from Tel-Aviv.

The mountains along the Mediterranean coast differ in height and width. In Syria the peaks are high and steep and barren, and in winter they wear a blanket of snow. The lower slopes are forested in a few places. In ancient times the mountains of Lebanon were noted for huge cedar trees, which were used for building temples and ships. Today only scattered groves of cedars remain. Wherever there is enough soil on the slopes, terraces have been made for vineyards. Most of the people in the mountain region live in villages in the valleys, where they can get water.

The highlands farther south are not so high or so rugged, but they are even drier. The most important part of the highland region is a limestone plateau which rises nearly three thousand feet above sea level. It is often called the Plateau of Judea. Streams have cut gorges through the edge of this plateau. Much of the soil has been washed away, leaving the surface rough,



*Ewing Galloway*

**This settlement in Israel has irrigated orchards and forest trees. Other irrigated areas can be seen beyond the stretches of desert.**

barren, and stony. In some places on the top of the plateau, however, there are small areas of level land.

Most of the people who live on these level lands are farmers or shepherds. More land is being cultivated as irrigation is extended. The chief crops are olives, grapes, and figs. Winds from the Mediterranean give up moisture as they rise to climb the Plateau of Judea, but there is not enough rainfall for forests.

Find Jerusalem on the physical-political map. The location of Jerusalem was important in olden times because Palestine lay in the path of an ancient route that led from Egypt to Syria. You can read about Jerusalem in the Bible. Near by is the little town of Bethlehem, which is known as the birthplace of Christ.

**The central lowland.** East of the highlands near the coast is a central lowland region. Part of it is the valley of the Jordan



River. In this long, deep lowland are located the Jordan River, the Sea of Galilee, and the Dead Sea. Find these bodies of water on the map on page 224. The long, straight valley of the Jordan is an unusual valley, for most of it is below sea level. The Jordan begins in the mountains of Lebanon, but when it enters the blue waters of the Sea of Galilee it is almost seven hundred feet below sea level. Steadily its level continues to drop, till finally it enters the Dead Sea, almost thirteen hundred feet below sea level. The distance between these two seas is only seventy miles.

Other streams flow into the Dead Sea, but this sea has no outlet. Perhaps you are wondering why it doesn't overflow. The Jordan Valley has a very light rainfall because it lies on the east side of the highlands. It is extremely hot, for it is only 30° from the equator. Water dries up quickly in such a hot, dry climate.

The Dead Sea is five times saltier than the ocean. All streams carry a little salt in their waters. For ages the Dead Sea has been receiving salt brought in by the Jordan and other streams. When the water dries up, the salt is left behind. As a result, the Dead Sea is becoming more and more salty. It deserves its name, for fish cannot live in its clear blue waters. Only the lowest forms of living things are found in the Dead Sea.

The chief occupation in the central lowlands today is grazing, just as it was in olden times. Small villages have grown up in the valley wherever the land is irrigated. Agricultural schools are trying to find crops suitable for this region. The Jordan River is already being used to generate electric power. It is also used to irrigate some of the dry fields of the Jordan Valley.

**Eastern highlands.** East of the mountains of Syria lies a wide stretch of plateau, most of which is the Syrian Desert. In this area is Damascus, which you can find on the physical-political map. Damascus stands at the edge of the desert. It is surrounded

by fields of grain, vineyards, orchards, and gardens. These are irrigated by a river that cuts through the mountains. Damascus from earliest times was the market of the desert. It was centuries old when Christ was born.

**Jordan.** East of Syria and Israel is the Kingdom of Jordan. It is larger than Israel or Lebanon, but most of it is very dry. The eastern part of the country extends far into the Syrian Desert. The western part is higher and receives more rain. Grain, vegetables, and fruit can be grown in this area. The population of Jordan is sparse. The people are Arabs, and most of them are nomads. Camels, sheep, and goats graze on the scanty pastures. An effort is being made to irrigate more land.

Jordan has good transportation for a country so high, so dry, and so thinly settled. On the map on page 224 you can see that a railroad runs north from the cities of Jordan to Damascus and beyond. A good highway connects Amman, the capital of Jordan, with Jerusalem. How does what you have learned about Jordan help explain why the capital is in the western part rather than in the eastern part of the country?

## Arabian Lands and Peoples

Turn to the physical-political map and notice that the Arabian Peninsula is made up of several different countries. These include the kingdom of Saudi Arabia; the independent countries of Oman, Yemen, and Kuwait; and Aden, a colony and protectorate of Great Britain. Find these countries on the map.

**Living on the Arabian Peninsula.** You have seen that most of the vast area of the Arabian Peninsula has a light rainfall. Even this small amount is not certain. Desert rainfall cannot be depended upon. Sometimes very hard, sudden rains fall, and valleys which have been dry for months or even years are filled with rushing streams.

Grass grows quickly after such rains, but it soon dries up in the hot sunshine. In some places you could travel for hundreds of miles without seeing any trees or even any grass. Large areas, especially in the south-eastern part, are barren wastelands of shifting sand dunes. In other areas there is only bare rock. The surface of this rock has edges so sharp that neither camels nor men can walk on it. You have learned about the great desert in northern Africa. Arabia is an eastern part of that desert.

Not all of Arabia is bare rock and burning sand. The greater part of the country, as shown on the map on page 220, is a plateau, high and dry. But most of the lowlands along the edges of the plateau have enough rain for grass to grow. Several of the higher mountain areas get more rain. The largest of these areas is in the southwestern part of Arabia. Turn to the rainfall map on pages 12-13 to see how much rain it gets.

Mountain streams may supply water to valleys at the edges of highlands. But the streams flow only a short distance before the water sinks into the dry earth or evaporates. Can you find any rivers in Arabia on the physical-political map? Scattered springs and wells fed by mountain streams supply moisture for date palms and gardens.

**Occupations of the Arabs.** Most of the Arabs live in little villages in oases. They are farmers. However, there are many other Arabs, called Bedouins, who wander through the desert lands of Arabia. The Bedouins find out where it has rained, and they go to those places so that their flocks can get grass and water. Sometimes they wander into the towns of the oases, where they trade animals and wool and skins for wheat, knives, pots, or other such supplies.

Arabs keep camels and horses in addition to sheep and goats. The sulky camel carries heavy

loads. Its hair is made into blankets, tents, and clothing. The Bedouins drink its milk and eat its meat. But the Arabs take greater pride in their fine horses. In the past they depended upon the sale of horses and camels for a large part of their income. They sold many horses in India, and camels were sold in Syria and Egypt. But now these countries are developing motor transportation to take the place of the animals.

The farmers of the oases have many problems. They are always worried about water for their crops, for many of the water supplies cannot be depended upon. All farmers dread locusts. Great swarms of these insects sweep across the country, eating up every plant. In some places drifting sands are a problem. Day after day sand which would soon cover the crops must be scooped up and carried from the gardens.

The oases produce different kinds of foods. In the oasis near Medina large quantities of excellent dates are grown. Some of the oases in the mountains produce honey and fruit. In other places wheat and barley are raised. The mountain slopes of Yemen are noted for coffee. But the farmers of Arabia cannot supply all the food that is needed. More than half of the food is imported. Exports are varied, but they amount to very little in world trade.

Since about 1940, the government of Saudi Arabia has had a new source of income. Oil was discovered near the Persian Gulf, and

Arabs lay an oil pipe line across the desert land of Saudi Arabia.

*Photo from European*







A map showing oil resources of southwestern Asia.

oil fields are being developed by foreign companies. There are refineries on Bahrain Island, which you can see on the map on this page, and on the coast near by. The map shows you where the important oil resources of southwestern Asia are located.

**The birthplace of Islam.** Soon after the end of the western Roman Empire, a great religious leader was born in Arabia. His name was Mohammed. He founded a new religion, called Islam, and his followers are called Moslems. Most of the people of southwestern Asia are Moslems. This religion gradually spread, not only in southwestern Asia, but across all northern Africa and even into parts of southern Europe. The Moslems worship in domed mosques like those in the picture on page 223. They are called to prayer by men standing high in the slender, lofty towers, called minarets. Mosques and minarets rise above the flat-roofed houses of most of the desert cities.

Mohammed was born in Mecca and was buried at Medina. Both these cities are sacred to all Moslems and are visited by thousands of people each year. Much of the income of Arabia comes from these visitors.

## Iraq—Land of Two Rivers

Iraq was once called Mesopotamia, a word that means “the land between the rivers.” Nine out of every ten people in Iraq live in the fertile Tigris-Euphrates Valley, but the country stretches out beyond it, as you can see on the physical-political map. Most of Iraq is dusty, parched desert land, brown and lifeless most of the year.

**Changes in Iraq.** Many gradual changes have taken place in Iraq. Ruins of ancient cities have been covered up by the sands of the desert. Irrigation systems built by the farmers of Mesopotamia thousands of years ago were damaged and neglected. Canals which once carried water to fields were choked with sand, and some parts of the lowland became swampy because of floods. The valley that had been important even before history was written became more sparsely settled, and less land was cultivated.

Modern irrigation dams and canals are now being built to provide a good water supply at all seasons. Many of the people of Iraq are nomads who prefer to wander from place to place with their herds. The government has encouraged these nomads to settle down and farm. Some of them have. They settled in small groups near the rivers and irrigation canals, or in the mountain areas where there is more rain. They raise wheat, barley, rice, and cotton. Three-fourths of the world’s supply of dates is from Iraq.

Iraq’s capital, Baghdad, has been a famous trading centre for centuries. The map on this page shows on which of the two rivers it is located. This river is navigable for small steamships. Baghdad, scene of many of the romantic *Arabian Nights* tales, is becoming a modern city. There are still bazaars and mosques and minarets. Country people still bring fruit and grain and hand-woven cloth to sell on market days. But where fine palaces and gardens once stood there is now a railroad station. Motor caravans travel on the old camel routes.

There are public buildings like those of western countries. Baghdad has become a centre of air transportation. Turn to the polar map on page 130 to see what cities have air lines to Baghdad. Why is a centre of air transportation needed in southwestern Asia? What advantage of location does Baghdad have that makes it suitable for an air-transportation centre?

**Rich oil fields.** Oil is the chief source of income for Iraq. Rich oil resources have been found in northern Iraq, near the city of Mosul. Foreign companies, chiefly from Great Britain and France, control the production and selling of oil from this region. These companies pay Iraq a certain sum of money each year for the use of the oil fields. Pipe lines for transporting the oil have been laid from the oil fields to ports of Israel and Syria.

## Iran and Afghanistan

You can see on the physical-political map on page 218 that Iran and Afghanistan are bordered by the Soviet Union on the north, and that the high Hindu Kush Mountains

separate Afghanistan from China and Pakistan. The lands and people of Afghanistan and Iran are much alike. Though each is today an independent country, they were once a part of a larger country known as the Persian Empire. For a long time Iran, itself, was called Persia.

**Nature of the region.** Iran and Afghanistan cover a large area but have few people. The surface is chiefly a plateau, with mountains surrounding it and rising above it. This plateau is shown on the map on page 220. In some areas there are so few trees that people use them as landmarks. Nearly all the rain comes in winter, and the long, hot summers are dry and windy. The largest area of nearly level land is in eastern Iran, but this is also the driest area.

Enough rain and snow fall on some of the high mountains to feed streams which flow down to the dry plateau. Towns and cities have grown up in places where people can get water. In the oases there are lovely gardens and orchards. Cereals, cotton, and some vegetables are raised, and Iran has long been noted for its fine fruit. Mulberry trees grow in northern Iran, and silkworms

**Flat-roofed adobe shops line the street of this oasis town in Iran. Notice the awnings made of large leaves.**

*Ewing Galloway*







*U. S. Signal Corps Photo*

**Numerous ways of transportation, old and new, on the crowded streets of Tehran. How many different means of carrying goods and of traveling can you see in this picture?**

supply raw material for weaving silk goods. Besides the oases, there are a few other fertile and prosperous places. One of these is a narrow strip of land along the southern shores of the Caspian Sea. Another is a small area of lowland bordering Iran and the Persian Gulf. Both regions have more rain than other parts of the country.

In the mountainous section thousands of nomads roam constantly in search of grass. Summer finds them high in the mountains, but in winter they move down to the lowland ranges. One large tribe crosses a high range of mountains twice each year to find enough grass for the animals. Often animals and even people are killed crossing the swift mountain streams and snow fields.

**Transportation and trade.** Though goods are still carried from place to place by caravan, methods of transportation in Iran and Afghanistan have improved. Automobile

roads connect the largest cities and lead to the borders to join roads of other countries. One of the most important roads goes from Kabul, the capital of Afghanistan, through Khyber Pass to Pakistan. Find the railroads from Tehran, the capital of Iran, to ports on the Persian Gulf and Caspian Sea.

Iran is one of the important oil-producing countries of the world. Its richest fields are near the border of Iraq, not far from the Persian Gulf. Afghanistan has oil deposits in the north and west. Wells have been drilled in Iran in recent years. The oil flows through pipe lines to refineries on the Persian Gulf. What other countries have oil wells and refineries near the Persian Gulf? Gasoline and other oil products are shipped from the refineries to European and Asiatic markets. Iran has other minerals, but little mining is done there.

Beautiful rugs are made on hand looms in small shops and homes. Sometimes they are

called *oriental* rugs. *Oriental* means "eastern." To the people of the Americas and of western Europe, Iran is an eastern country. From earliest times the nomads of Iran have spun the long, silky wool of sheep and goats into yarn. They have colored the yarn with dyes made from bark, roots, and berries. Much of the charm of oriental rugs is in their colors, which seem to become softer and more pleasing with age.

Oil is transported chiefly by pipe lines which lead to the coast. It is by far the most important export of Iran, with oriental rugs next on the list.

The chief exports of Afghanistan are wool and skins. These include the valuable skins from lambs, used in making fur coats.

As you may suppose, the chief imports of all of these countries are textiles and other kinds of manufactured goods.

## THE GEOGRAPHY WORKSHOP

Start your study of southwestern Asia by imagining you are a pilot ordered to fly to Tehran. Plot your course on a globe. How will you find the shortest route? If you fly at 450 miles an hour, how long will the trip take? Over what countries will you fly?

### I. THE WORLD

#### IN YOUR COMMUNITY

Perhaps southwestern Asia seems a very remote region to you. What contact does your community have with these barren lands? Perhaps you will find more contacts than you expect.

Many tourists travel to Israel. If you can find someone who has been there, ask him to tell the class about his trip. Be ready to ask him questions about how he travelled, how the land looks, the climate, the cities he saw, and the work the people were doing. You may find a war veteran to tell you about Iran and some of the other countries.

There are probably people in your community whose ancestors came from southwestern Asia a long time ago. This region, you know, was the homeland of the Hebrews.

In recent years many Jewish people have moved back to the homeland of the Hebrews. Perhaps some people in your community have relatives who live there. If so, ask them whether they have any letters or pictures your class may see.

#### *Imports from southwestern Asia*

Although Americans do not import a great variety of goods from southwestern Asia, a few things are sent to this continent. On your grocer's shelves, you may find figs from Turkey or dates from Iraq.

Many people in Canada have oriental rugs from Turkey or Iran. These rugs are very valuable. If you know someone who has a small oriental rug you may be able to borrow it to bring to class, but you must be very careful with it.

Many Persian lambskins are imported to make coats. Many small objects, such as jewellery and metal boxes, are also imported.

#### *Our heritage from southwestern Asia*

As you know, southwestern Asia was one of the regions in which civilization began. Either in this region or in Egypt lived the first farmers, herdsmen, potters, weavers, brickmakers, builders, and metalworkers. The plow, the wheel, glass, coined money, scales for weighing, and many other early inventions were made in this region. Perhaps you would like to prepare an exhibit of things we still use that were probably invented in southwestern Asia.

In what country of southwestern Asia did Christianity begin almost two thousand years ago? What influence has Christianity had on the world? Find out how many Christians are living today and in what parts of the world they live in large numbers. How has Christianity influenced the lives of the people in your community? Consider the effect of such things as the Bible, the Ten Commandments, and the observance of Sunday.

Southwestern Asia has given us many words and names. How many pupils in your class have names that came from this part of the world? Some examples are David, John, Joseph, Martha, Sarah.

A number of common words in our language came from this part of the world, perhaps a little changed. "Alphabet" comes



from “aleph” and “beth,” the first two letters of the alphabet used in part of this region. “Camel” comes from the same language. “Damask” is the name of a kind of cloth first made in Damascus. “Damascening” is a decorative finish on metal, named for the same city, which was long famous for its metalwork. We speak of a place where many people gather as a “mecca,” from the many Moslems who go to Mecca to visit religious shrines. Muscat grapes are named for Masqat, a town in Oman. When we say a river meanders, we mean it has curves like those of the river Maeander, now called the Menderes, in Asia Minor. When people say someone is as wise as Solomon or as rich as Croesus, they are comparing him with ancient rulers of southwestern Asia.

For hundreds of years people who knew scarcely any other book knew the Bible. This accounts for many of the words borrowed from southwestern Asia and for many references to this part of the world in our literature. Have you ever heard songs about Jerusalem and other places in Israel? Do you know a poem that starts, “The Assyrian came down like the wolf on the fold?” Many other poems and songs also refer to southwestern Asia. The stories in the *Arabian Nights* came from there. The old Greek poem called the *Iliad* was written about an ancient city near the Dardanelles.

If you would like to plan a program on southwestern Asia, you can find many songs, poems, and stories that refer to it. Which ones do you understand better because you have studied the geography of the region?

Kostich Photo Service



## II. A PICTURE STUDY

Study guide number 3 on page 219 asks why southwestern Asia is sparsely populated. Use the picture on this page as you discuss the answer. The photograph was taken near Jerusalem.

Jerusalem has become a fine modern city, but the use being made of the land in this picture has changed little in thousands of years. No better way has been found to use it. This might also be said of many thousands of square miles in southwestern Asia.

Discuss the following points as you talk about the picture.

1. What use is being made of the land?
2. In the crowded parts of Europe, a farm family may make a living on five or ten acres of land. Could that be done here? In the picture you should find evidence for three reasons why the land is not farmed.
3. How does the picture suggest difficulties in transportation?
4. Compare the picture with other pictures of southwestern Asia in this book. How does this picture differ from those that show farms and cities?
5. In what other parts of southwestern Asia might you find scenes resembling this?

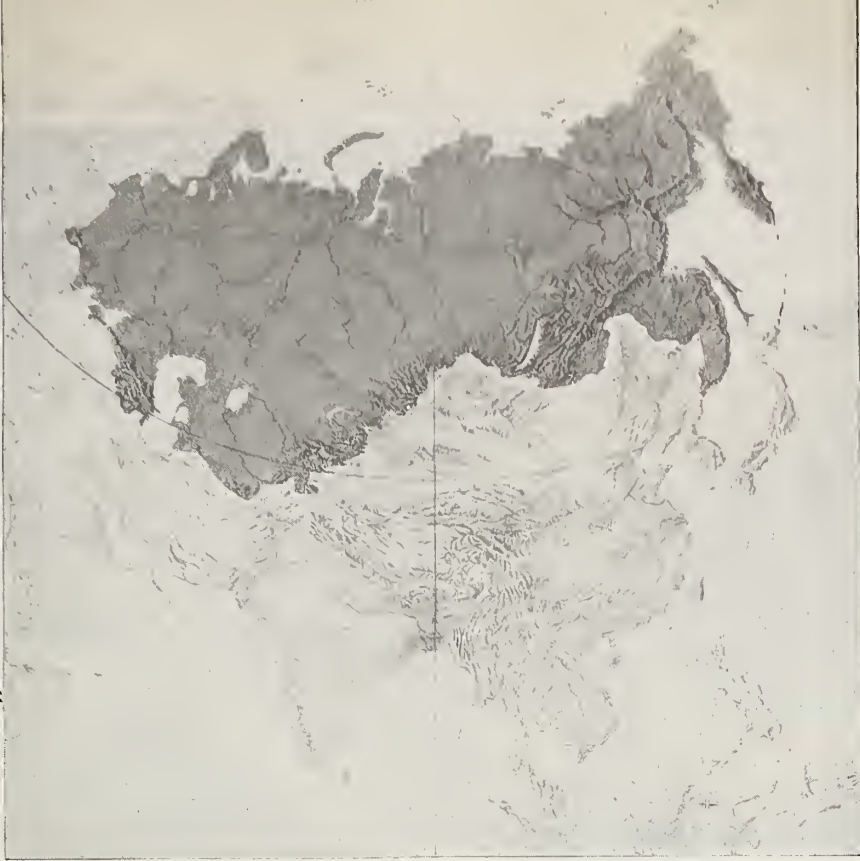
## III. PICTURES TO SORT

Imagine you have ten pictures taken in southwestern Asia. You wish to show that modern industrial civilization is coming to this region. Which of the following pictures will you choose? What other pictures would you need?

1. A textile mill
2. A mosque
3. A camel caravan
4. An airport
5. A man weaving a rug
6. An irrigated fruit orchard
7. An oil pipe line
8. A hydroelectric plant
9. An agricultural school
10. A shepherd with sheep

## IV. NEWS FROM SOUTHWESTERN ASIA

In your newspapers and magazines you will find many references to the countries of southwestern Asia, and stories also. Watch especially for news about industries, oil wells, irrigation, and transportation.



## *Living in the Soviet Union*

### A LARGE COUNTRY WITH MANY PEOPLE

From central Europe eastward across Asia stretches a vast country. No other country in all the world is as large. The name printed over this area on the physical-political map on pages 234-235 is Soviet Union. That name did not appear on any maps before World War I. The Soviet Union was then called Russia. Some people call it Russia even today, but actually Russia is only one part of what is officially known as the Union of Soviet Socialist Republics. Some shorten this name to the initials U.S.S.R.; others shorten it to Soviet Union. The Soviet Union is a union of sixteen divisions called soviet republics. Each soviet republic has its own

government and its own laws. At the same time, each republic is required to conform to the national laws of the Soviet Union.

**The vast Soviet Union.** Just look at the territory covered by the Soviet Union! It spreads almost halfway around the globe, from the Baltic Sea to the Pacific Ocean. More than half of Europe and a third of Asia are included within its boundaries. There is a great-circle distance of four thousand miles between Leningrad, on the Baltic Sea, and Vladivostok, on the Sea of Japan. From east to west the Soviet Union is wider than Canada. Though it extends farther











south than Canada, its distance of three thousand miles from south to north is about the same as that from Lake Erie to the north of Ellesmere Island.

The Soviet Union has an area of almost 8,500,000 square miles—one-sixth of all the land in the world. Canada is not half as large. Size alone does not make a country great, but large countries are likely to have many advantages over small countries. A very large area is likely to be important if it has great natural resources and supports ambitious people.

As you can easily imagine, there are many differences in a country as large as the Soviet Union. There are great forests and rolling grasslands, high mountains and areas below sea level, stretches of frozen wasteland and deserts of sand. Polar bears are found

**Cotton is grown in the southern part of the vast territory included in the Soviet Union.**



*Sovfoto*

in the far north, and tigers prowl through the subtropical forests of the far southeast. Extending from the west is a stretch of wonderfully fertile soil, but through the deserts of the south plod camel caravans. In some places it is so cold that iron becomes as brittle as glass; in other places the burning sun and sand will cook an egg. It may be foggy for weeks over the coastal lands, but not even a trace of a cloud will be seen for months in the desert. Naturally, the people of the Soviet Union do not all live in the same way. Look for differences as you read.

**The peoples of the Soviet Union.** Almost eight hundred years ago, a Russian prince founded the city of Moscow (Moskva). You can find this city in the western part of the Soviet Union on the map on pages 234–235. It began as a fortress that enclosed the prince's private estate, but after a century there were hundreds of thousands of people living in the vicinity. They began to spread out. They annexed more and more territory, and Moscow grew into a city of great wealth and power. In 1547 a prince of Moscow declared himself a czar, which is another name for emperor. The Russians were ruled by czars from that time down to 1917. Under the czars the Russians pushed farther and farther out from Moscow. They met new groups of people. These people and the lands they occupied were added to their growing country.

Russian pioneers moved eastward across northern Asia, which is called Siberia, at the same time that Canadians were pushing westward across North America. The Russians sailed from one island to another in the North Pacific until they landed in Alaska. Then they began to push southward until they reached what is now California. In North America they met Spaniards, British, and Americans. The Russians held only Alaska, and this was their foothold in North America until 1867. It was in that year that they sold the territory to the United States.

During World War I, the czar was overthrown and the government of Russia was

changed. The Union of Soviet Socialist Republics was organized, and the new government began at once to make plans for establishing a communistic state. It was run by a dictator who was a leader in the Communist party.

The regions of the Soviet Union include many different peoples. About three-fourths of them are Slavs. Turn back to page 137 and read again the section that tells about the Slavs. The remaining fourth is made up chiefly of peoples from northwestern Asia and Mongolia. There are striking differences among the groups. They range from nomadic hunters and trappers in the far north to people whose ancestors built cities and wrote books before Christ was born. One hundred and fifty different languages are spoken in the Soviet Union.

**Study guides.** The following questions will help you to understand the geography of the Soviet Union. Keep them in mind as you read. Maps and pictures as well as what you read will help you answer the questions.

1. Why does the Soviet Union have several different kinds of climate? (I, VII)



*Sonfoto*

This trapper in the far north will take his furs to a trading post. Compare this picture with the one on the opposite page.

2. Into what four natural regions is the Soviet Union divided? What are the most important occupations in each of these regions? Why are some more densely populated than others? (I, IV, V, VII)

3. In what respects is the coast line unsatisfactory? What parts are best suited for commerce? (I, VI, VII)

4. How are the rivers used? (VII)

5. What conditions have helped the growth of manufacturing? (III, VII)

6. How have the needs for foreign commerce been reduced? Why is trade within the country so large? Which regions need to trade with each other? (VII)

## WHAT WE CAN READ FROM MAPS

### LOCATING THE SOVIET UNION

1. Take the outline map of Asia on which you have printed the names of the countries of southwestern Asia and add the name of the Soviet Union in the right place. Now color the area included in the Soviet Union.

2. Turn to the map on pages 28-29 and notice the narrow strait that separates the Soviet Union from North America. Now find the Arctic Ocean on a globe or on the polar map on page 130. Notice that North America and the Soviet Union almost enclose

this ocean. You can see that the northern coast of Canada is not very far from the northern coast of the Soviet Union.

A few powerful ships plow through the ice along the northern coast of the Soviet Union. But no ships can break through the polar ice all the way across the Arctic from Canada to the Soviet Union. The frozen waters of the Arctic Ocean do not hinder airplanes. They can fly over both land and sea and follow the shortest routes between different parts of the world. Airplanes could fly from one country to another across the Arctic Ocean.



Trace on a globe or a polar map the route that an airplane might follow in going from Vancouver to Moscow. Notice how near the North Pole this route passes. Of course, you know that airplanes do not fly northward all the way on the route you have traced.

3. Turn to the world map on pages 10-11. Lay a sheet of paper straight across the map with the lower edge along the southern boundary of Canada. About how much of the Soviet Union extends farther south than Canada? Now place the paper along the same boundary so that you can see the whole of Canada. About how much of the Soviet Union is in the same latitude as Canada? From these map tests, would you say that most of the Soviet Union lies in the high, the low, or the middle latitudes?

4. In an east-west direction, the Soviet Union extends through nearly 170 degrees of longitude. Find the  $0^{\circ}$  meridian on the map on pages 28-29. Now find the meridian of  $30^{\circ}$  east longitude. Follow it through the western part of the Soviet Union. What city in the Soviet Union is near the line of  $30^{\circ}$  east longitude? Now find the meridian of  $130^{\circ}$  east longitude. What Soviet city on the Pacific coast is near this line? After the people of Vladivostok have seen the sunrise, how long will it be before the people of Leningrad see it? If you have forgotten how to find the difference in time, study again the material on page 35. The Soviet Union extends even beyond  $130^{\circ}$  east longitude to  $170^{\circ}$  west longitude. The country is divided into time belts much as Canada is. For example, when it is noon in Leningrad, it is eleven o'clock at night at the easternmost edge of the country.

#### LOWLANDS AND HIGHLANDS

1. You can see on the physical-political map that the Soviet Union has a very large lowland region and a very large and high mountain area. Turn to the relief map on page 220 and tell what name is given to the entire lowland region. In what part of the country are the highest mountains located? The Soviet Union really faces west and north. The arrangement of high mountains makes travel easier in these directions than to the south and east.

2. Find the Ural Mountains on the map. This mountain range forms a low divide between the European and the Asiatic parts of the Soviet Union. Because the Urals are both low and narrow, they do not form serious

barriers to travel. The Ural Mountains are most important for the minerals that are mined there.

3. Now find the Caucasus Mountains, between the Black and Caspian seas. This range of mountains is high. It forms almost a perfect wall. Turn to the world map on pages 10-11 and compare the Caucasus with the Rocky Mountains in Canada. Is any part of the Soviet Union south of the Caucasus? What effect do you think these mountains may have on the temperature of the lands south of them? What effect do they have on the routes followed by the railroads?

4. All along the southern edge of the Asiatic part of the Soviet Union there are high mountains. What countries share these ranges? Notice that these mountains turn northward and extend along the eastern edge of the Soviet Union.

#### INLAND WATERWAYS

The many large rivers of the Soviet Union are naturally divided into two groups, some flowing south and the others north.

1. Turn to the physical-political map and locate the Dnepr and Don rivers, both of which finally reach the Black Sea. Now find the Volga and Ural rivers, which flow into the Caspian Sea. At one place the Don and the Volga are very close together. What city on the Volga is at this big bend? Can you imagine in what way the people of the Soviet Union may take advantage of this short distance between these two important navigable rivers?

By tracing the Volga and its tributaries, you can see that this river system drains almost all of the European part of the Soviet Union. Find two canals that connect it with other waterways. Does it have connections with the Arctic Ocean?

2. Find the region marked Siberia on the map. It is the part of the Russian Republic that is in Asia. Through Siberia flow the Ob, the Enisei, and the Lena rivers. All flow into the Arctic Ocean. You can see on the physical-political map that the Ob and its tributaries are in the great lowland area just east of the Ural Mountains. Notice the large estuary at the mouth of the Ob. The Enisei is on the plain, but there are highlands east of the river. Notice the wide valleys of the tributaries which flow from the highlands into the Enisei. The Lena and its tributaries are far to the east. They also have wide valleys.

Like the Mackenzie River in Canada, the rivers of Siberia are slow, and in the spring they overflow their banks. For about six months they are frozen, and in the spring the barriers of ice at their mouths act as dams, causing the streams to flood their valleys.

3. The Amur is the large river in the southeastern part of Siberia. One of its tributaries from the south comes from Manchuria. Into what body of water does the Amur flow?

4. Follow the shore line of the Caspian Sea. You will find that it has an irregular shore line but no outlet. The Volga and Ural rivers which flow into this sea add a large volume of water day by day. Yet the sea does not overflow. Why not? Find the port of Baku. You can see that two railroads connect Baku with ports on the Black Sea. What mountains are between these two railroads? North of the Caspian Sea, the land is below sea level. What name is given to this lowland? Find the Aral Sea. In what way does it resemble the Caspian Sea?

## FOLLOWING THE COAST LINE

The Soviet Union has a long seacoast, but most of it is unsatisfactory for trade. Let us see whether the map will suggest some of the difficulties.

1. Let us first consider the west coast. What sea borders the Soviet Union on the west? Why isn't this body of water good for transportation? If you have forgotten, turn to the top of page 123 for the clue. Find the port of Leningrad on the map on pages 28–29. How far would you say Leningrad is from the North Sea? How is this a disadvantage? Trace a possible route that a small boat going from Leningrad could take to reach the Atlantic Ocean. Now turn to the map on pages 234–235 and find the water route to the Arctic Ocean.

2. What two seas help form the southern boundary of the Soviet Union? Which of these two seas do you think would be more useful for commerce? Why? The Soviet Union has a number of ports on the Black Sea. Turn again to the map of Eurasia and name the bodies of water through which a ship would pass in going from the port of Rostov to the Atlantic Ocean. Through what straits would it pass? Do you see that

this route might easily be blocked by an unfriendly nation? Trace the route a ship would follow in going from Odessa to the Indian Ocean. Which of these routes seems to you to be the longer?

The Caspian Sea also has several ports. You have already found the port of Baku. Now find Astrakhan on the map on pages 234–235. Baku sends petroleum northward by boat to Moscow. Trace the route these boats follow. What is Astrakhan's advantage of location as suggested by the map? Why is it an advantage to lands east of the Caspian to have ports on this sea?

3. Do you think the great width of the Soviet Union is an advantage or a disadvantage? Name a Canadian city that is about as far north of the equator as Vladivostok. Although Vladivostok is at the southern end of the Pacific coast of the Soviet Union, its harbor is often clogged with ice. Follow the coast line northward from Vladivostok to the Arctic Ocean. Does the map show any other towns along this coast? Are they large or small? Where is the greater number? Would you expect them to have much or little traffic? Perhaps you can give two reasons for your answer.

4. As in Canada the Soviet Union's northern coast line is the longest. Is it regular or irregular? Your map shows several settlements along the Arctic Ocean. Most of them are on rivers. How may the rivers serve these ports? Far to the west are the two most important ports, Murmansk and Arkhangelsk. What symbol on the map suggests that these are the most important Arctic ports? Murmansk is an ice-free port. How may goods from Leningrad be shipped to Murmansk?

This is a public square in the northern city of Arkhangelsk.

*Seefoto*





## CLIMATE AND VEGETATION

Places that are far from the ocean have a continental climate because they have winds that blow from the land. Even though a region borders the sea, it may have a continental climate if its winds blow mostly from the land. The Soviet Union covers such a vast area that most of it has a continental climate, with warm or hot summers and cold winters. Because the winds blow mostly from the west across central and northern Eurasia, even the Pacific coastal lands of the Soviet Union have a continental climate.

1. Keeping in mind what you have learned about the days and nights in different latitudes, would you expect the northern part of the Soviet Union to have long or short days in summer? Would you expect it to have long or short days in winter? Is any part of the country a land of the midnight sun?

2. There is a large difference between summer and winter temperatures even north of the Arctic Circle. Find on the map the town of Verkhoyansk, in the northern part of Siberia. There the temperatures in January average  $59^{\circ}$  below 0, and temperatures of  $90^{\circ}$  below 0 have been recorded. Is this place in high or low latitudes? Does it have long or short days in January? The July temperatures average  $60^{\circ}$ . Some July days have temperatures higher than  $80^{\circ}$ . How much difference is there between the average temperatures for January and July? Such great differences in temperature are typical of a continental climate in high latitudes. Have similar temperatures been recorded in northern Canada?

3. Most of the rain in the Soviet Union falls in summer. Turn to the map on pages

12-13 and notice how much rain falls in different parts of the Soviet Union. In general, does the rainfall increase or decrease from west to east across the country?

4. Look at the map on pages 16-17 and notice that the Soviet Union has four large vegetation belts. As in Canada, the one farthest north is the *tundra*. It is really a frozen desert of the north. Is the greater part of it south or north of the Arctic Circle? Turn to the map on pages 12-13 to see how much rain falls in the tundra. In the north, even though the rainfall is light, the country does not look dry. Because of low temperatures, the water does not evaporate rapidly. The winters are so long and cold and the summers are so short that only the surface of the ground thaws. This keeps the water from soaking far down into the ground, so the surface in summer is moist and in many places swampy. Now turn to the growing-season map. How long a growing season does the tundra have?

5. Very gradually the tundra merges into forest land. Bushes, dwarfed and misshapen by the harsh wind, are seen first. Clumps of bushes appear, and trees become more numerous, till finally the tundra merges into the forest. The map shows how far south in Siberia forests extend. How much rainfall do the forest lands have? In general, is the growing season long or short? Look again at the vegetation map and tell what type of forest is found in Siberia and the northern part of the Soviet Union in Europe. Does Canada have a similar type of forest?

Now find two areas of broadleaf forest. Find these same areas on the rainfall and growing-season maps. You can see that the broadleaf forests are found where there is more rain and a longer growing season.

6. Find the grasslands on the vegetation map. In the north they are much like the southern part of our Prairie Provinces. Compare the growing season in these two areas. How long are they? Does the rainfall map show that rainfall in the grasslands increases or decreases from west to east? What are the grasslands of Siberia called? A *steppe* is usually treeless and level or rolling.

Find the place where the rainfall is between 40 and 60 inches. How is it located in relation to the Caucasus Mountains? At what

Bushes and cone-bearing trees grow near the edge of the tundra.

Sovfoto





Sovfoto

The grasslands that stretch east and west in a wide belt across the Soviet Union are called the steppe. In some places the black soils of these great, level, treeless plains are among the richest in the world.

latitude is this rainy place? Would you expect it to have mild or severely cold winters?

7. A great region of steppe extends all the way from the Caspian Sea to the boundary of China. Toward the south it becomes drier and drier. The grass finally fades out into the vegetation belt farthest to the south, the desert. Find this desert region on your vegetation map. It has a long growing season, but what does the rainfall map tell you about the amount of rain it receives?

#### WHERE PEOPLE LIVE IN THE SOVIET UNION

1. You have learned that the Soviet Union is a very big country with a very large population. Notice on the map on pages 18–19 how densely populated the western part is. Does the densely populated area of industrial western Europe and central Europe extend into the Soviet Union? Gradually the population decreases from west to east. Let us see how the population pattern is related to certain other conditions in the country.

2. Turn to the map on pages 234–235 and find the part of the Soviet Union that has the densest network of railroads. Do you see that this network thins out toward the east, but extends beyond the Ural Mountains? You can see that two railroads reach Omsk, and from that city a long railroad line continues to the Pacific coast. This long line is called the Trans-Siberian Railroad. Now look again at the population map. Can you see that more people live along this railroad than in the country north or south? Can you explain this fact?

3. Find on the population map three long strips of fairly dense population located in river valleys. Can you match the physical-political map with the population map to see what river valleys they are? Can you suggest two reasons why these valleys have more people than the regions beyond?

4. Find the large, densely populated region east of the Caspian Sea. This has become a very important mining and industrial region. Find it on the physical-political map. Does it also have railroads?

## THE EXTENSION OF FARM LANDS

Up until the present century, about four-fifths of the people of Russia were farmers. Most of them had only primitive farm tools, and they did not use fertilizers. Some farmers paid little attention to weather conditions in deciding when to plant and harvest their crops. They allowed the rain to wash away large quantities of fertile top soil, leaving a soil that would grow very little. Gullies ruined many fields. *Droughts*, or long periods during which very little rain fell, caused crops to wither. Often insects ate up the

crops. There were frequent famines in some areas, while other areas had more food than they needed. The poor system of transportation hindered the easy exchange of foods and other things.

Just as in Canada, however, farming methods in the Soviet Union are changing. Now fewer people give all their time to agriculture. Many farmers and their families have gone to work in industrial areas. Even with fewer people working on the farms, crop yields have increased. Almost





*Sosfoto*

Farm buildings, used by workers on a collective farm, are grouped together at one end of the village. The fields are beyond.

all farm lands are cultivated by machines. Tractors speed the work to be done. Combines harvest more in one day than a whole family used to reap in a month. New varieties of grain that will grow farther north have been developed. Experiments are being made with other kinds of crops, and animals are being conditioned to colder climates. Some lands have been drained, and others have been irrigated.

## Farm Organization

Farming is carried on in all of the four large vegetation belts of the Soviet Union. Crops and methods differ, however. You would expect such differences, for there are differences in natural environment, population density, and means of travel, too.

Soviet farmers neither own their land nor rent it. All farm lands in the Soviet Union are owned and controlled by the government. Some of the farms are called state farms; others are called collective farms.

Most state farms have been developed on land which had not been cultivated before. They are used as models to show what can be done with machinery and with better methods of work. Each specializes in pro-

ducing a particular crop or in raising some certain kind of livestock. Hundreds of state farms raise cattle, pigs, or sheep. Many farms specialize in growing tea, cotton, tobacco, or fruit. Other farms raise poultry or silkworms. Near the cities are state farms which grow vegetables for the urban markets. In the far north there are reindeer farms. In the past thousands of reindeer died for lack of food during the long, bitterly cold winters of the far north. Now large herds are cared for on the state farms. The state farms of the Soviet Union are much like our own experimental farms. They employ many farm-

ers, but by far the greatest number of farmers work on the collective farms.

Each of the collective farms covers about a thousand acres and supports about seventy-five families. Perhaps it would be easier for you to think of these farms as coöperative farms. Instead of having each family look after its own stretch of land and tend to its own animals and its own farm buildings, the families combine their resources. Each family has a home and a garden, and some families own goats, poultry, and perhaps a cow or two. The rest of the property is taken care of by the entire group.

The work is planned and directed by a chairman selected from the farmers. All workers are paid according to the amount and kind of work they do. Machinery rented from government-owned machine and tractor stations is used on most farms. Both men and women are trained to use machines. One section of a collective farm, of course, is set aside for the homes of the workers. They live near each other in a little village. As you can see in the picture on this page, their barns and stables are sometimes grouped together at one end of the village.

Each of the regions of the Soviet Union has soil and climatic conditions that make

it more suitable for certain kinds of development than for others. An effort is being made, however, to develop each region in such a way that, if possible, the people will be self-supporting. The farmers are also encouraged to produce something that is needed in other parts of the Soviet Union. Since the Soviet Union is unfriendly toward a number of other countries, it seeks to produce as many as possible of the goods it needs.

## Living in the Tundra

Winters in the tundra are long and cold and dark, and the ground is frozen hard. Howling, driving winds sweep the snow from place to place, until finally it settles in sheltering hollows. Sometimes the strong winds expose pale, apparently lifeless plants that grow flat against rock or barren soil. These plants, called *lichens*, are found where few other plants can live. Reindeer eat the exposed lichens, and sometimes they paw away the thin crust of snow to add more of these plants to their scanty meal.

The summers are short, but there is almost continuous daylight. Everything seems to spring to life with the first warmer, longer days. There are no trees on the tundra—not even bushes. But during the summer patches of grass and clusters of tiny flowers dot the usually dull, gray landscape. Huge flocks of birds leave lands farther south and fly to the tundra. Animals from the cone-bearing forests graze here in summer.

In the tundra, even summer skies are cloudy and days are foggy. The snow melts, and the surface of the ground thaws. But the earth just beneath the surface soil, called the *subsoil*, remains frozen. It isn't warm long enough for the subsoil to thaw out. The water from the melting snow cannot be soaked up by the frozen subsoil. Rivers flood their valleys, and the water has no way to drain off. Bogs and marshes form in low, flat areas. Swarms of mosquitoes breed in these water-logged lands, making life miserable for all living things in the tundra. At the

end of the short summer, the migrating birds and animals leave, the flowers wither and die, and soon the tundra is sprinkled with snow.

**Developments in the tundra.** The western part of the tundra is an extension of Lapland, about which you read on pages 129–130. The people in all parts of the tundra have lived much as the Lapps live. They fish and hunt and trap animals. Nomadic northerners follow their herds of reindeer from the shores of the Arctic Ocean to the fringe of the forest. Others lead a more settled life, and in the far north there are people who have never seen a living tree.

Slowly scientific developments are changing the lives of these people of the tundra. They are being taught new methods of doing their work, and they are encouraged to try to do other kinds of work. Canadians can understand these changes very easily because we are bringing about similar changes in northern Canada.

The Arctic Ocean is the great connecting waterway between the western and eastern parts of the Soviet Union. You have seen that many rivers from the southern part of the Soviet Union cross the tundra and empty into the ocean in broad estuaries. These rivers and the ocean are icebound for several months during the year. The navigation season on the ocean is lengthened by means of icebreakers. Since 1932, the Soviet Union has built many of these strong boats which push their way through the ice, crushing it as they go. Each year a dozen ships follow the Northern Sea Route from Murmansk at the west to Vladivostok at the east.

Seaports have been developed along the Northern Sea Route as well as at either end. One of the newest and largest of the Siberian ports is Igarka, about four hundred miles from the mouth of the Enisei River. Find Igarka on the physical-political map. The population, only about 20,000, is not large as compared with other ports you have studied, but it is large for a region so remote and so new in its development.





Sovfoto

Varieties of vegetables and fruits that will grow under Arctic conditions are cultivated in cold frames and greenhouses.

Igarka has become an important shipping port for lumber and for furs. It has lumber mills which use the logs that are floated down the Enisei River. From Igarka the lumber is sent by the Northern Sea Route to Murmansk, and from there it is shipped to European markets. Ships bring supplies to Igarka for the settlements up the river. The supplies are then transferred to river boats, which take them south.

There are other settlements along the Arctic coast. Some are not much more than radio and weather stations where observations of weather are made and recorded. Others are experimental farms. People who live in remote areas need local food supplies. In the far north meat may be obtained by hunting and by slaughtering reindeer. Fish are plentiful in the rivers in summer, and in winter they are caught through holes in the ice. But fresh fruits and vegetables are also needed. Some of the vegetables are grown in greenhouses which are lighted by electricity to hasten growth. Others are started under glass and are then transplanted. Vegetables such as turnips, cabbage, radishes, spinach, and kohlrabi grow well in cool weather.

Kohlrabi is a kind of cabbage with a turnip-shaped head.

Transportation in the tundra is not well developed. From the south, the Arctic coast is most easily reached by rivers. Murmansk, the most important port of the far north, is connected with Leningrad by railroad. This port is better than other Arctic ports. The warm current which keeps the harbors of Norway open also keeps this harbor open. Murmansk is far away from the markets of the Soviet Union and is not used much when other ports are open. Arkhangelsk, on the White Sea, is the largest lumber-milling centre in the Soviet Union.

## Living in the Forest Belt

No other country has so large an area in forests as the Soviet Union. The map on pages 16-17 shows that the forest belt extended from the Baltic Sea to the Pacific coast. The vast cone-bearing forest south of the tundra is known as the *taiga*. Do you remember what the rainfall in the taiga is? In the forest the cover of snow supplies moisture when it melts in the spring. So, even though the rainfall is not heavy, there is enough moisture for the trees to grow. In the west there is a triangular-shaped area of broadleaf forest between the taiga and the grassland. Far to the east, in the Amur River Valley, is another area of broadleaf forest. Some of these forests are used more than others. The main reason for this is that some parts of the forest area are more conveniently located than others.

**The use of the taiga.** The taiga is the least-developed part of the great forest. It is dark and gloomy and quiet. Large areas are far from any settlement and have never been explored. The valuable fur-bearing animals

of the forests, such as ermine, foxes, and sables, are disturbed now and then by hunters and trappers, who live in lonely little settlements along the streams. Yakutsk, on the Lena River, is one of the fur-trading centres. The hunters and trappers take their furs to trading posts in the spring. There, with the money they receive, they buy food, clothing, and other supplies.

There are many cleared spots in the taiga. Lumbering accounts for some of them. Most of the lumbering is done near rivers that can be used for floating the logs to sawmills. Lumbering is carried on along the three great rivers, the Lena, the Ob, and the Enisei. There are two important lumbering cities on the Enisei, Igarka, about which you have already read, and Krasnoyarsk.

Other clearings have been made around villages. The houses of Siberian villages are usually built of logs. For a long time wood was the chief fuel, not only for heating the houses, but also as a source of power for river steamboats and locomotives. Some land has been cleared for farming, but most of the farming of the Soviet Union is done in regions where the growing season is longer. In the taiga, as in our own forests, an effort is being made to control forest fires and to protect animals. Near many of the villages, lookout towers rise above the treetops. Alert foresters spot fires as soon as they start, and hurry away to prevent the flames from spreading. The people of the Soviet Union, like Canadians, have learned that they must protect their natural resources.

**The western forests.** Large areas of the western forests have been cleared for a long time, and much lumbering is still carried on. Leningrad and Moscow are two of the many settlements that started in the forest. Wooden houses and churches of the early cities were either destroyed by fire or replaced by modern city buildings. Western forests supply most of the timber used or sold by the Soviet Union. Many sawmills and pulp and paper mills are located in the northwestern part of the country. What ports in the tundra handle the forest products?

Much of this forest land is swampy, and the trees that grow there are of poor quality. Almost 6 percent of the land in the Soviet Union is in swamps. People used to think this was a disadvantage. Now they profit from the peat supplied by these bogs and marshes. Peat is used in many ways: for fuel, as fertilizer, for making chemicals, and as bedding for livestock. When properly drained and fertilized, these lands are used for farming. The farms of this forested area grow potatoes, oats, barley, rye, hemp, and flax. The climate and soil are especially good for flax, which is grown for fibre, and the Soviet Union is the leading producer. Study the map on page 246 to see where most of the flax is grown. What other flax regions have you studied?

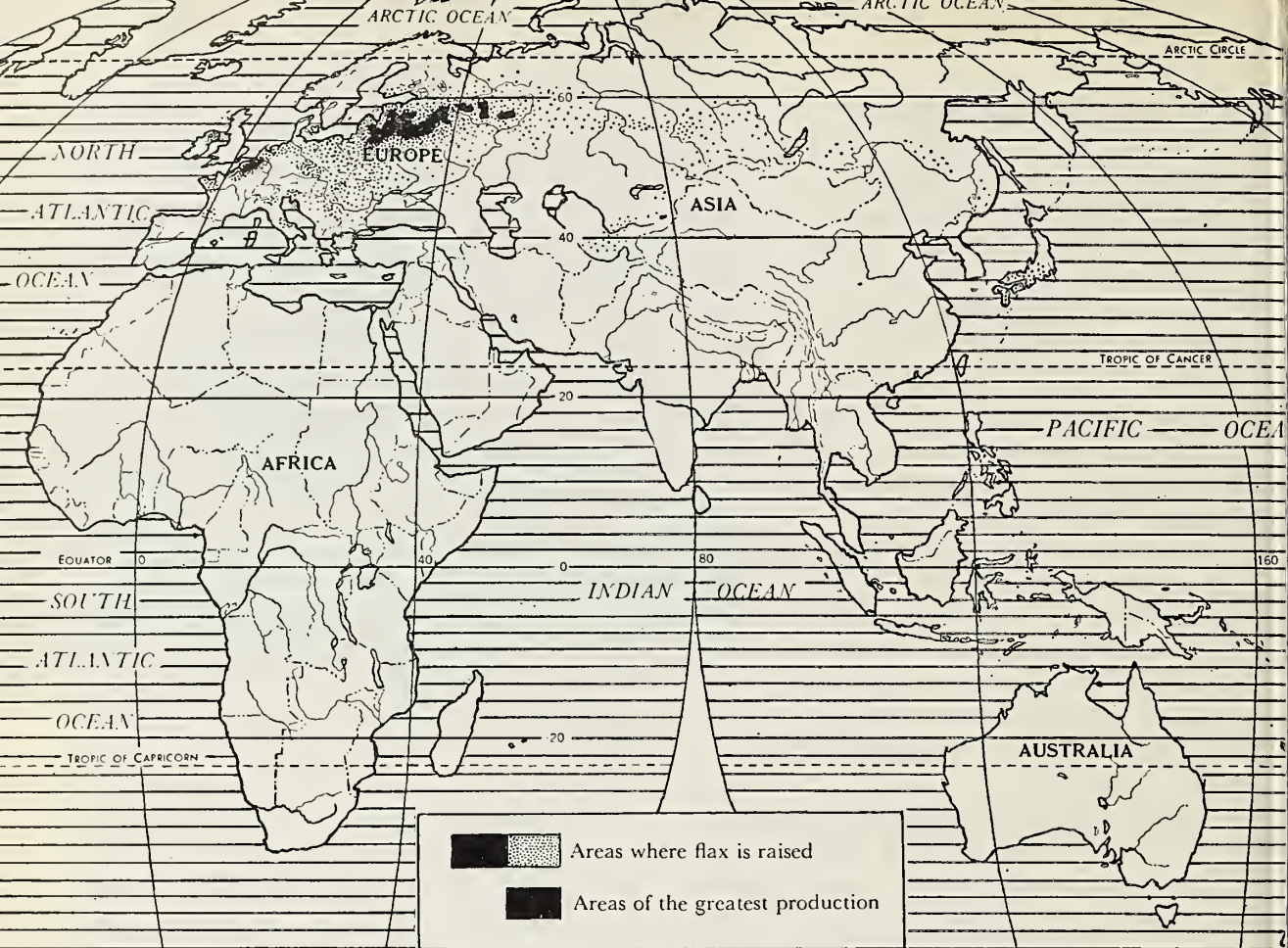
**The eastern forests.** The forests of the far eastern part of Siberia, along the Amur River, can be reached more easily from the markets than can the taiga. These forests

Melting snow provides enough moisture for the great forest that spans the Soviet Union from the Baltic to the Pacific coast. Lumbering is important in regions that can be reached by some means of transportation.

*Sonfoto*







A map showing where flax is grown in lands overseas.

supply hardwoods such as oak, maple, and walnut. Much of their lumber has been used in building new settlements in this region. China and Japan have been markets for wood products from the Soviet Union.

The Soviet government is trying to improve and increase agriculture in eastern Siberia, for that region cannot become important for industry until it has an adequate food supply. The maps on pages 76, 77, and 79 show that some wheat, oats, and rye are raised in southeastern Siberia, especially in the Amur Valley. Look at the map to see where the 60° parallel crosses the Soviet Union. The maps will show you that very little grain is raised north of this parallel.

The far-eastern part of the Soviet Union has a continental climate, but warm winds blow in from the Pacific during the summer. They bring enough moisture to give the

southeastern part of the country a rainfall of more than 20 inches a year. Barley and sugar beets are raised, in addition to wheat, rye, and oats. The severe winter climate is a great disadvantage to eastern Siberia. The ground in this part of the country freezes to a great depth. Sometimes it does not thaw until late in June. Spring planting may thus be delayed, and crops may not have enough time to ripen.

## Living in the Grasslands and Deserts

Southward the dark, gloomy forests become thinner. Between light and sunny woods are stretches of grassland. Farther south, even the woods are less frequent. The grasslands become more and more extensive, till finally trees are found only along the streams and

in low, damp places. As you have learned, this vast stretch of treeless plain is called the steppe. In the grassland there is a region with some of the richest soil in the world. It is called the black-earth region. In the past little thought was given to conserving this soil through crop rotation and fertilizers. During the hot summers, sweeping winds carried away the parched earth in clouds of dust. Still, with enough rainfall, the black-earth region yielded crops year after year. The map at the right shows the location and the great extent of this black-earth region in the Soviet Union.

**Densely populated farm lands.** The best farm lands of the Soviet Union are found in the black-earth region west of the Urals. The rural population of this part of the Soviet Union is denser than in the good farm land of Canada's prairies. Turn back to the population map on pages 18-19 to see how these two regions compare. The continental climate of the western part of the Soviet

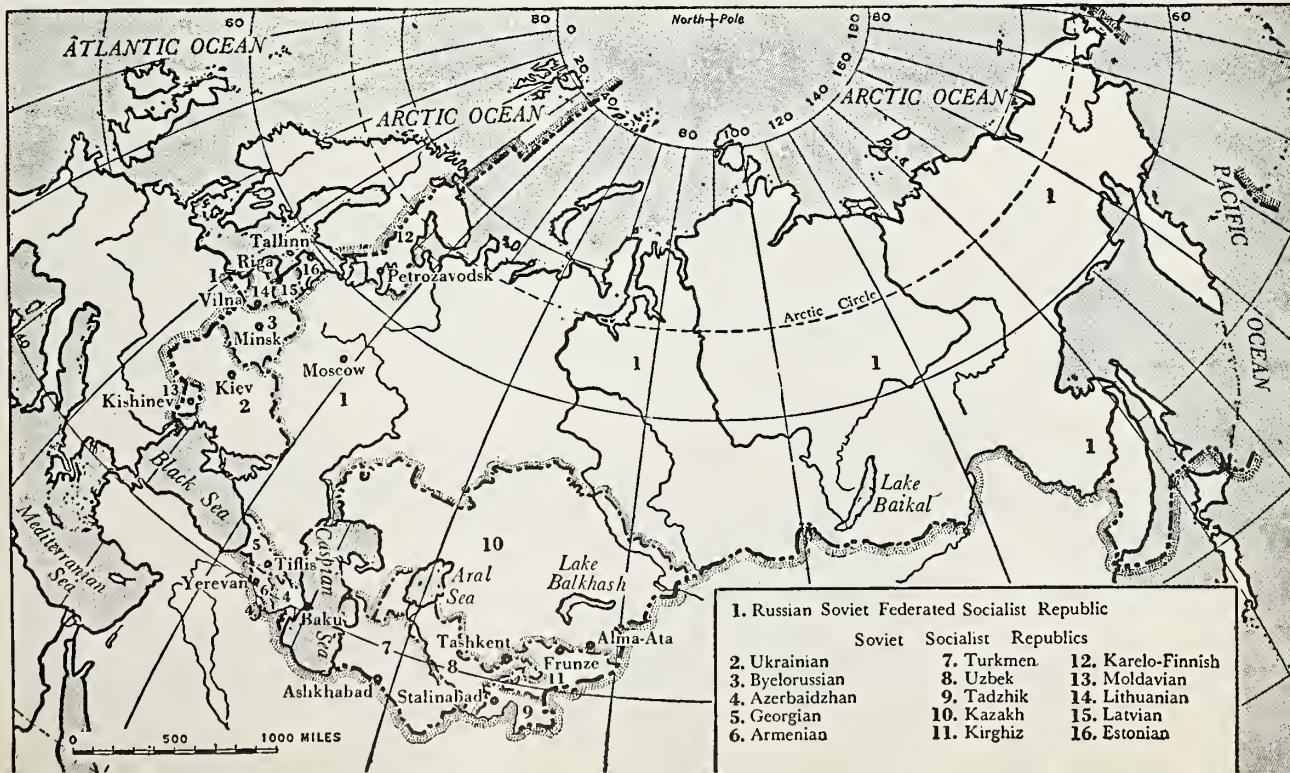
Union is good for farming. Winters are not so cold as they are farther east, and the growing season is longer. Rainfall is light in nearly all of the Soviet Union, but more rain falls in the western part than in the eastern part. Most of the rain comes in the spring or summer.

The Ukraine, one of the sixteen republics of the Soviet Union, is in this good farming region. Find the Ukraine on the map below. It is only a small part of the country, but about one-fifth of all the people in the Soviet Union live in this fertile area. The Ukraine



A map showing the black-earth region of the Soviet Union.

An outline map showing the sixteen republics of the Soviet Union.





is a great wheat-growing region. It produces more than a fourth of the total wheat crop of the Soviet Union. Because the winters are so cold there, they grow chiefly spring wheat just as Canadian farmers do in the Prairie Provinces. This kind is planted in the spring and harvested in late summer.

The Ukraine produces many different crops. Among these are tobacco, flax, rye, sugar beets, cotton, and sunflowers. Turn back to the map on page 141 to see where most of the sugar beets are raised. The Soviet Union leads the world in the production of sugar beets. Flax and sunflowers are cultivated chiefly for their seeds. As you probably know, flaxseeds are used in making linseed oil. Sunflower seeds make excellent feed for poultry and pigs. When crushed, they yield an oil that can be used in cooking. The oil cake that is left after the oil is pressed out is a nourishing feed for livestock.

The farm lands of the Ukraine are well situated for shipping. This densely populated section has a thick network of roads and rail-

roads. Rivers as well as railroads carry wheat and other products to ports on the Black Sea. One of the leading grain-shipping ports is Odessa. Look at the physical-political map to find other ports of the Soviet Union along the Black Sea and the Sea of Azov.

Two large inland cities of the Ukraine that owe their growth partly to agriculture are Kiev and Kharkov. What does the map show about the size of each of these cities? Both Kiev and Kharkov have factories that use raw materials supplied by farms of nearby regions. Among the factory products are flour, beet sugar, leather, and textiles. Kiev and Kharkov are also noted for heavy manufactures, many of which supply machinery and tools for farms.

**Subtropical farm lands.** Find the peninsula which extends into the Black Sea just west of the Sea of Azov. It is called the Crimea (Krym). There the climate is Mediterranean, and the crops are Mediterranean in character. People go to the southern coast of the Crimea to spend their winter vacations.

**Flax is gathered into bundles on a collective farm. The plants are pulled out of the ground by the roots, and care is taken to keep the stalks straight and in bundles of even lengths.**



Sovfoto





Sovfoto

Children visit a large state tea farm in the subtropical region near the Black Sea. On this farm experiments are made to improve the quality of the plants and the methods of cultivation. Our own government has established experimental farms in many parts of Canada.

It is a resort region somewhat like the Riviera in southern France. Now study the physical-political map to see if you can tell why the winters of the Crimea are similar to those of the Riviera. Among its many towns and cities are Yalta, a resort city, and Sevastopol, an important seaport and naval base.

South of the Caucasus Mountains is another subtropical region. The rainfall is heavy and there is seldom frost, for the mountains protect it from the north winds. Along the Black Sea, the lowlands and lower slopes of the hills are used for growing grapes, tobacco, citrus fruits, mulberry trees, and tea. More and more land is used for tea, and the silk industry is also increasing.

**Siberian farm lands.** Look at the map on page 247 to see how far the black-earth region extends into Siberia. The maps on pages 76, 77, and 79 show that wheat, oats, and rye are grown on this fertile land. It is also the most densely populated part of Siberia, as you can see on the map on pages 18–19. On these five maps the pattern of distribution of soil, crops, and people is almost the same. Explain in your own words why this is true.

For a long time these fertile Siberian lands were little used. Settlers gradually moved eastward in much the same way as the pio-

neers of our country moved westward from the Atlantic seaboard to the Prairie Provinces. They found good rich farm land, but they had difficulty in marketing their crops. When the Trans-Siberian Railroad was built, millions of people moved into Siberia. You located the Trans-Siberian Railroad in your study of population on page 241. Trace it once again, this time from Moscow eastward to Vladivostok.

New communities were established. Villages of log houses were surrounded by pastures and fields of grain. As the region became better developed, more and more herds of dairy cattle were kept for the production of butter. One of the state farms near Omsk covers 12,000 acres and supports about 2000 dairy cows and 500 workers. Almost half of the land is used for growing crops which can be used for *ensilage*. This nourishing feed is prepared by chopping green plants, such as corn or beans, into small pieces. Pits are packed with these chopped greens and are then covered over with earth. The ensilage ferments, but it does not decay. It can be used all winter long for feeding cattle. In our country you may have seen silos which are built above ground. In Siberia pits are better, because the moist silage does not freeze when it is stored underground.





*Sovfoto*

Novosibirsk is located midway between Moscow and Vladivostok. Notice the long railroad bridge that crosses the Ob River in the background at the right. The river is covered with great cakes of ice.

Tractors, combines, and other modern machines are used on the collective and state farms which have been organized in this region. It resembles the spring-wheat region in the Prairie Provinces of Canada. The winters are long and severely cold, and the summers are short but hot. In spite of this harsh climate, the farmers grow crops which do not ordinarily grow where the winters are so severe. Apple trees are trained to spread out close to the ground so as not to be injured by the cold winds. In some places they are covered for protection.

Western Siberia requires supplies of many kinds. Two large cities have grown up in this farm belt. They are Omsk and Novosibirsk. The map shows that Omsk is at the place where the Trans-Siberian Railroad crosses the Irtysh River. Novosibirsk grew up at the place where the railroad crosses the Ob River. Boats bring products to railroad stations for shipment, and they return with supplies from the cities. From Novosibirsk a railroad runs southward to rich irrigated lands. Both Omsk and Novosibirsk have been made important manufacturing centres that supply many of the things needed here and in other parts of the Soviet Union.

**Using the dry lands.** Turn to the physical-political map and find again the large area of land lying between the Caspian Sea and the western boundary of China. This vast area is almost a third the size of Canada. It lies across the Caspian Sea from Europe, and so some call it Trans-Caspia. Others call it Turkestan, for people somewhat like the Turks live there. The republic of Kazakh takes in most of the area. The eastern part of the region is a broad plain covered with short, scanty grass, and because nomadic people called the Kirghiz have lived in that area for a long time, it is called the Kirghiz Steppe. The Kirghiz Steppe is northeast of the Aral Sea.

You have already found that the rainfall in this area is less than 10 inches a year. Nomadic tribes wander over the vast Kirghiz Steppe in search of pasture. In summer they migrate to the mountains, but in winter they return to the plains. Collective groups have been organized here too. Better breeds of cattle and sheep are raised, and instructions are followed in caring for animals. By planting crops for pasture and harvesting hay for winter use, the people need not travel tiresome distances in search of food for their



animals. In some places rivers from the mountains of central Asia supply water for irrigating the land. As a result, oases are found near the foothills of the mountains. A number of towns and cities have grown up at oases. The cities include Bukhara, Tashkent, Samarkand, and Stalinabad. Locate them on the physical-political map. They show you where the irrigated farm lands are.

Some of these cities are larger than you might expect. Samarkand has a population of 135,000, while in Tashkent live more than 500,000 people. Some of the cities are very old. Samarkand, for example, has some buildings more than six centuries old. In the old part of the town are large mosques enclosed by high walls, and streets lined with low, flat-roofed houses built of sun-dried bricks. Modern cotton and silk factories, office buildings, and theatres are in marked contrast to the old city. Many of the old irrigation canals have been found and enlarged by present-day engineers.

**Oasis crops.** Today cotton is the chief crop of these irrigated farm lands. The cotton plant does not require very much rainfall, but its roots need a good supply of water. There are irrigated lands near the mountains bordering the part of the country farthest south. From this region comes most of the Soviet Union's cotton crop. Turn back to page 208 and find this cotton-growing area on the map. Cotton has been raised here for years, but production has increased since 1930. The Soviet government has encouraged the growing of cotton in order to have a supply for its own textile mills.

While cotton is the chief crop of the irrigated lands, certain other crops are raised also. These include wheat, barley, sugar beets, rice, and fruit. For a long time, these rich desert oases have been famous for orchards and vineyards. The dry air and the abundance of sunshine increase the sugar content, not only of sugar beets, but also of grapes, melons, and apricots. Because of their high sugar content and solid pulp, many grapes



*Sovfoto*

These sheep are pastured on the Kirghiz Steppe.

Workers pick ripe cotton grown on irrigated plains. Foothills of the southern mountains rise abruptly.

*Sovfoto*







Sovfoto

Both trucks and camel caravans are used to transport raw cotton from the oasis fields to marketing centres.

are dried for raisins. Mulberry trees growing along the streams produce heavy crops of leaves which are fed to silkworms. Formerly silk, as well as cotton, was shipped from Kazakh to the textile mills of Moscow. Now much of the cotton and silk is woven in the mills of the oasis towns themselves.

#### A LOCATION TO FIND

Turn back to the picture on page 242. The picture is used there to show you how a collective farm looks, but you are not told exactly where the farm is. If you would like to know where the picture was taken, you can find the location within a few miles by following the clues given in the next column.

1. From the picture, would you judge that the rainfall is fairly abundant? In fact, the rainfall is between 20 and 40 inches. This clue means that you do not need to look further in any part of the Soviet Union which does not have from 20 to 40 inches of rain.

2. Are the trees that you see in the picture cone-bearing or broadleaf? These trees are varieties that belong to the natural vegetation of the region. This clue means that you can disregard all but the broadleaf-forest areas.

3. The picture was not taken in the largest of the areas of broadleaf forest in the Soviet Union.

4. The picture was taken in the European part of the Soviet Union.

5. The location of the picture is just north of a range of mountains.

## INDUSTRIAL EXPANSION

You know something about Canada's rapid industrial development in recent years. The Soviet Union has also made considerable progress in developing its industries. The Soviet government has helped the development of heavy manufactures. Huge plants

for making electricity have been constructed. The iron and steel industry has been expanded. Stress has been placed upon the building of "machines to make machines."

The little industry carried on in Russia at the beginning of the twentieth century was

distributed very poorly. Factories were all in the west. Raw materials were sent to industrial centres and manufactured. Then a large part of the goods was returned to the original shipping point. Transportation costs rose. Time was wasted.

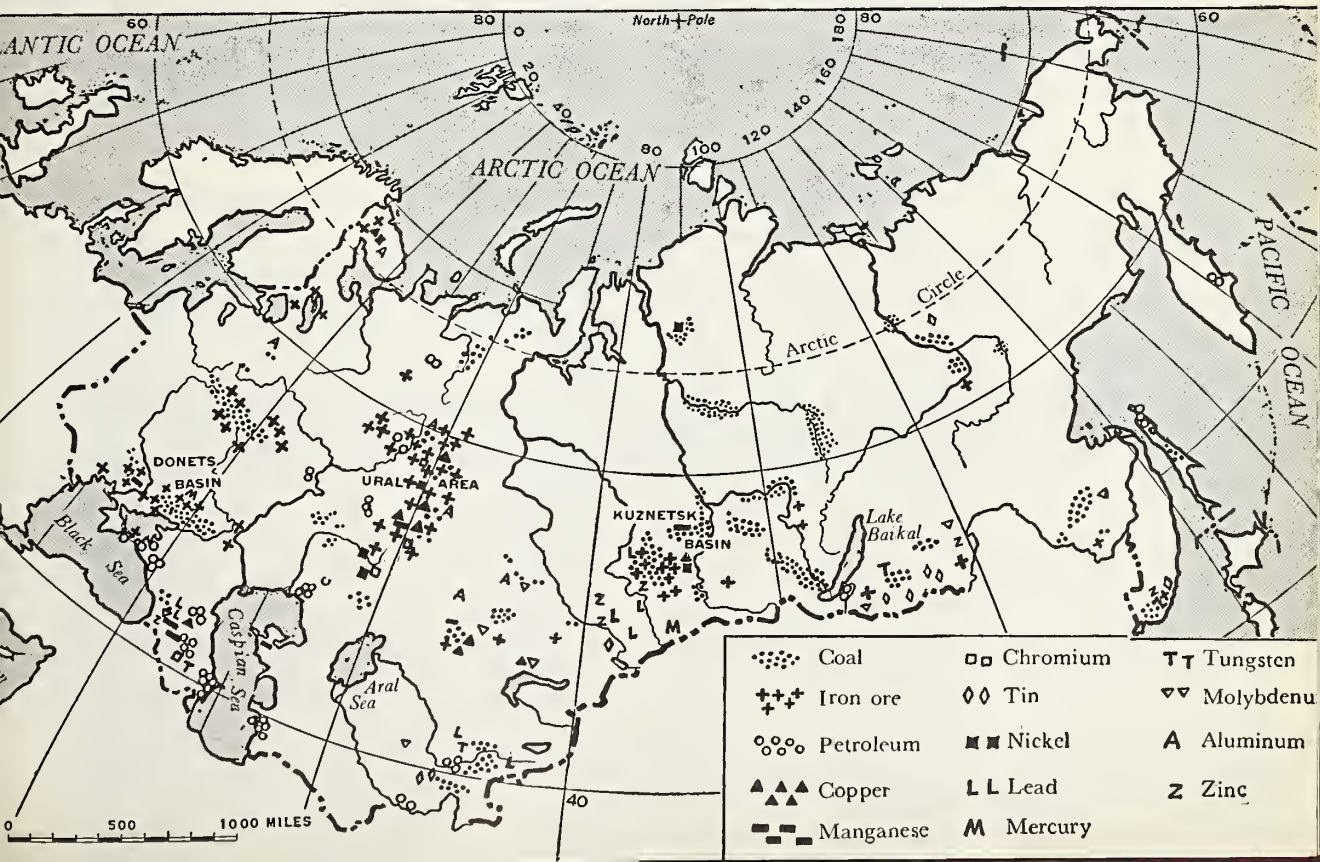
The plan for the development of the Soviet Union provides for factories in every part of the country. Factories need raw materials and power resources, and transportation facilities are needed to bring the two together. The Soviet Union is rich in both raw materials and power resources. In some places transportation facilities are very well developed; in other places there are almost none. To overcome difficulties in transportation, factories are built as close to supplies of power and raw materials as possible. Sometimes materials and power are close together, and neither has to be transported great distances. To reduce the costs of transportation, mines are being developed in all parts of the Soviet Union. Modern factories are working at full speed and are using the products of the forests, the farms, and the mines.

## Sources of Power

The Soviet Union has abundant power resources. As you have already learned, wood was an important source of power in the forested areas in the early days. Now the use of modern machines and the growth of industry make necessary a greater development of every kind of power, to make full industrial production possible. Therefore, many new power sources are being developed.

**Scattered coal fields.** New mines have been opened in many coal fields of the Soviet Union. More than forty regions now use coal from their own mines. The map on this page shows that the mines are scattered from the island of Sakhalin in the far east to the western edge of the Soviet Union, and from the Arctic Ocean to the boundary of Afghanistan. Turn back to page 66 to see how the Soviet Union ranks as a coal-producing country. In the west, coal of the best quality comes from the Donets Basin, north of the Sea of Azov. On the physical-political map,

A map showing where minerals are found in the Soviet Union







*Sovfoto*

Near the left of this picture is the main shaft of this large coal mine of the Donets Basin, source of much high-grade coal.

find the Donets River, near which this field is located. Coal from the Donets Basin was formerly shipped to many different cities. Recently coal of poorer quality has been used whenever possible to save the better coal and reduce transportation costs. Moscow and Leningrad are using lignite and peat in increasing amounts. Peat is burned in Leningrad for making electricity.

In western Siberia, south of the Trans-Siberian Railroad, is the large Kuznetsk coal field, with thick beds of excellent coking coal. The beds are not far below the surface of the ground and are easily worked. Factories have been started here to take advantage of this coal supply. Some of it is also shipped to older industrial centres east of the Urals. In some places it is burned underground to produce gas and other by-products. This is a very economical way of using coal. Use is made of almost all the coal of a mine, and less work on the part of the miners is required. The gas can be piped to any place where it is needed, and thus the high costs of railroad transportation are avoided.

**The development of electric power.** Electric power has been developed on a large scale in the Soviet Union. It is served by a network of power lines and stations which send electricity to many parts of the country. Some of the electricity is generated by water power. One of the large hydroelectric plants was built at the dam on the Dnepr River, near the city of Dnepropetrovsk. Others of this type, though not so large, are located in the Caucasus region and in the far north, near Murmansk. More large dams and power plants are under construction in the Soviet Union.

Electric power is also produced by burning fuels. Peat, low-grade coal, and coal of good quality are among those used. These power plants are widely

distributed, though most of them are in the industrial areas. Electricity is used in operating the machinery in many factories, and electric locomotives are used on the freight trains in the Caucasus. These trains haul heavy loads of timber, minerals, and other raw materials up the steep slopes and over the high mountain passes that make transportation difficult in the Caucasus.

**Sources of oil.** Oil resources are very important to the Soviet Union. The map on page 253 will show you that the chief oil-producing area lies between the Black and Caspian seas on each side of the Caucasus. This region is not far from the oil fields of southwestern Asia. The largest yield of oil is from the wells of the small peninsula near Baku. From Baku two pipe lines run to Batum, on the Black Sea. One of these lines carries kerosene, the other petroleum. Oil is shipped by tank steamers to Astrakhan, on the Caspian Sea. From there it is shipped north on the Volga River to many different refineries. Crude oil can be shipped more





*Sovfoto*

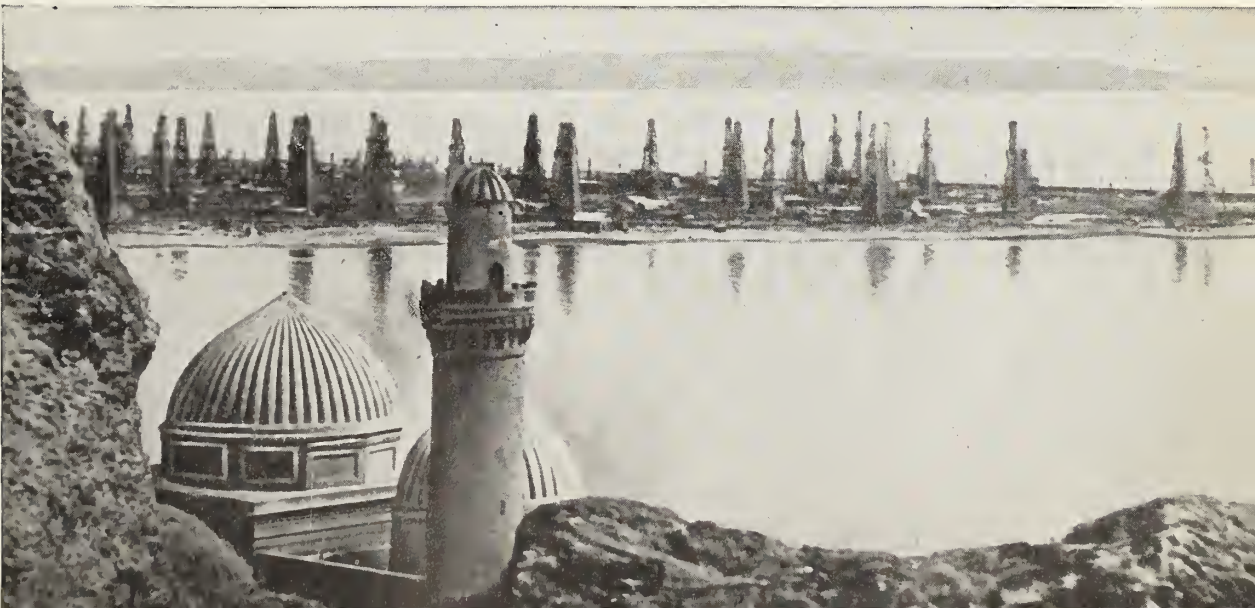
**This hydroelectric plant in the rugged Caucasus Mountains supplies power to factories in distant regions.**

cheaply than the refined products. Many oil products are inflammable, and must be handled with care. Some must have special containers. The Soviet Union has refineries in many parts of the country. This reduces difficulties and costs of handling and transporting petroleum products.

Oil fields are located in other parts of the Soviet Union, too, particularly north of the Caspian Sea and in the Ural Mountains region. Oil production in the Soviet Union is large, but little is exported. The home market is increasing because of greater use of automobiles, tractors, and airplanes.

**At Baku on the Caspian Sea are the richest oil fields in all Europe. Here you see part of a Baku oil field.**

*Sovfoto*





## Producing Raw Materials

Every part of the Soviet Union contributes to the industrial development of the whole country by producing raw materials. Factories are located to manufacture the raw materials that are close at hand, or to use those that can be easily transported to power. The map on page 253 tells you what minerals are mined in the Soviet Union. It also shows that almost every part of the country has mines. As you know, iron ore is very important for the industrial development of a country. Turn again to the diagram on page 66. About how many tons of iron ore does the Soviet Union produce in a year?

The richest known deposits are in southern Ukraine, near the Dnepr River. At Magnitogorsk, near the southern end of the Urals, iron is mined on a large scale. Magnetic Mountain, from which the ore is taken, is said to be composed largely of iron ore. The iron ore found there is a kind known as magnetite. This explains the name of the mountain and of the city, Magnitogorsk. Other iron mines are located near the southern boundary of Siberia in the Kuznetsk Basin, near Lake Baikal, and in the valley of the Amur River. There is a promising undeveloped field near the city of Kursk. As you can see on the physical-political map, Kursk is north of Kharkov.

Some other minerals indicated on the map of minerals are needed in the manufacture of special kinds of steel. These minerals are chromium, manganese, and tungsten. What other useful ores are mined? Where is the greatest variety of ores found?

In addition to iron and the other metals that have been mentioned, vast supplies of raw materials are obtained from the farms and forests of the Soviet Union. Lumbering provides work for a great many people. Logs are sent to sawmills and to finishing mills, where lumber is prepared for building houses. Doors, window frames, flooring, and siding are made ready to put in place. Wood is also supplied to paper and rayon mills.

From the paragraphs you have read about farming, you could probably make a long list of products that are sent to factories. Sugar beets and potatoes are used in the Soviet Union as they are in central Europe. Cotton, flax, hemp, wool, and silk are supplied to textile mills. Hides, which are by-products of meat packing, are sent to tanneries. This is not a complete list. Many other agricultural products are used in factories.

## Industrial Centres

Under the czars, half the manufacturing in Russia was carried on in Moscow and Leningrad. These two cities are still industrial centres, but the regions farther east are being developed.

**The Moscow industrial region.** Moscow is the centre of the most highly industrialized section of the Soviet Union. It is the capital, not only of the Russian Republic, but of the entire Union of Soviet Socialist Republics as well. The population map, pages 18-19, shows that Moscow is in the most densely populated part of the Soviet Union. The physical-political map suggests several advantages that Moscow, one of the largest cities in Europe, has. It is the biggest railway junction in the country, and canals and rivers connect the city with the Baltic Sea, the White Sea, and the Caspian Sea.

Large river boats can come into the centre of Moscow. Just north of the city you can see the canal that connects the Moscow River with the Volga River. This is a very important canal, for it connects Moscow with the country's busiest waterway. A large reservoir was made when this canal was constructed. It is sometimes called the "Sea of Moscow." This reservoir provides an abundant water supply for the city. The hydroelectric plant which was built at the dam furnishes the electric power used in Moscow and the surrounding cities.

Electric power is used in operating the machinery of many of the factories. Lignite



*Sovfoto*

This beautiful square in Moscow is bordered by large modern buildings. Development of industries and transportation systems has made Moscow one of the great cities of the world.

mined in the Moscow area is not suitable for all industrial purposes. Much coal is shipped in from the Donets Basin, and oil is brought from the Caucasus region.

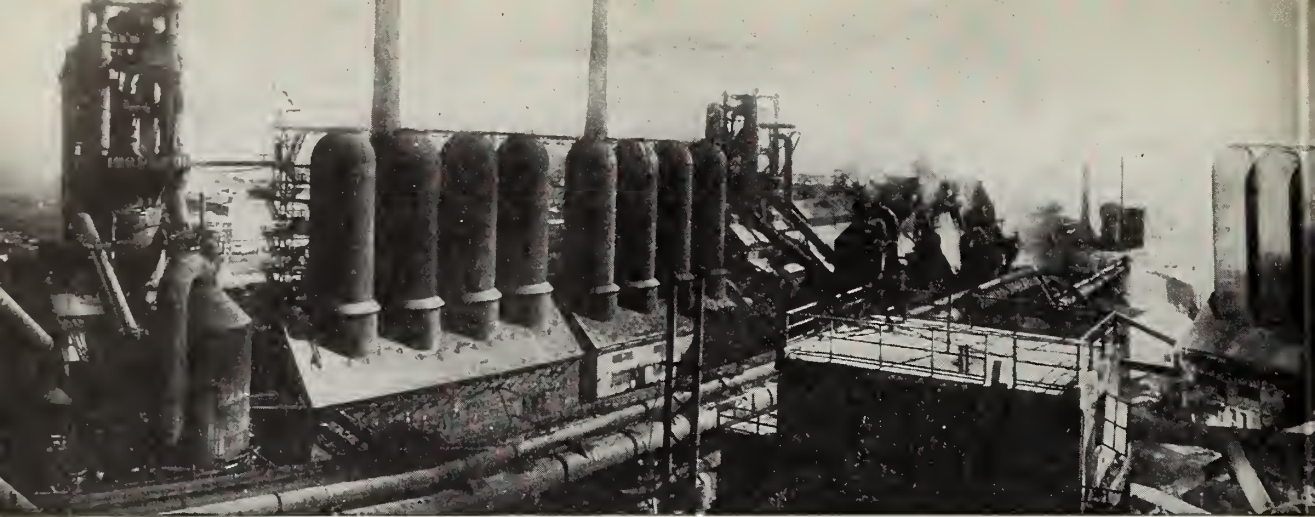
With far-reaching transportation facilities, many different kinds of raw materials are brought in, manufactured, and distributed to market areas. The first factories to be built in Moscow were textile mills, but now there are factories of almost every type. New factories, tall office buildings, and comfortable modern apartment houses for factory workers have taken the places of most of the earlier buildings.

Not all of the manufacturing in the Moscow industrial region is done in the city of Moscow. There are many other manufacturing cities near by. The whole region has been planned to bring these cities into one industrial organization. If you were to look down upon them from an airplane, you would see that the smaller cities are arranged around Moscow. Strips of cultivated land or parks

separate them from each other. Broad roadways lead to the centre of Moscow, where the government buildings which are known as the Kremlin are located. These buildings mark the site of the ancient fortress where the city of Moscow began.

**The Leningrad industrial region.** Not quite two hundred and fifty years ago, Peter the Great, a Russian czar, decided that he wanted a "window" through which he could look out upon Europe. He chose a small strip of newly conquered land on the Gulf of Finland to serve as his window. There he built a city that rivalled the beautiful European cities he had visited. It was not an easy task. The site was dreary marshland. It was often flooded, and storms swept across it. A forest of pilings was driven into the earth for the city's foundations. Thousands of peasant workers died while the city was being built. But it was completed and is today the chief western port of the Soviet Union.





*Sovfoto*

This large steel mill was built in the Ural Mountains at Magnitogorsk where the iron ore is mined.

Turn to the map and notice that Leningrad is a little farther north than Churchill, Manitoba. No other large city with a population as great as that of Leningrad is so far north. During the winter the harbor freezes and ice-breakers are kept busy plowing through the ice to keep the channels open for ships.

In spite of its disadvantages, Leningrad has grown. Canals connect its harbor with Lake Ladoga and with Lake Onega, and other canals connect these lakes with the Volga and other rivers. Turn to the map and trace these water routes. This is one of the most important industrial regions in the Soviet Union. The manufactured products of Leningrad require skilled workmen. The factories make electrical machinery, paper, cellulose, chemicals, and textiles. Power is obtained from hydroelectric stations near by and from fuel sent from the Moscow area, the Donets Basin, and the Caucasus oil field. Engineering is an important occupation in Leningrad. Models of many new machines are made there before they are produced in the factories of the Soviet Union.

**Eastern industrial areas.** There is an important industrial region in the Ural Mountains. You have learned that the Urals are a storehouse of minerals. They provide iron and a variety of metals for factories. Look again at the map on page 253 to see what

minerals are mined in this region. The Ural area is well to the east of the most densely populated lands of the country, and neither the Ural Mountains nor the surrounding countryside are well supplied with coal. But the Ural area has one big advantage. It is conveniently located for all parts of the Soviet Union.

Farther east, in the Kuznetsk Basin, are rich deposits of high-grade coal. From these Kuznetsk deposits, about fourteen hundred miles away, the Ural area now gets coal for its iron and steel mills and machine shops. As a result, Magnitogorsk, Sverdlovsk, and several other cities in the Ural area have become large manufacturing centres. Steel mills in these cities are almost as large as the largest in the United States.

Let us now consider the Kuznetsk Basin. We know it has rich coal deposits, but it has only small supplies of iron and other metals. So the trains that haul coal to the Urals return to the Kuznetsk Basin with loads of iron, platinum, chromium, and nickel. As a result, the Kuznetsk Basin, too, has become a great industrial region. Novosibirsk, Stalinsk, and other cities near by have become important manufacturing centres. The same kinds of steel mills have been built at each end of the connecting railroad line.

Iron deposits have been found recently south of the Kuznetsk Basin. As they are

being developed, less iron is hauled from the distant Urals. In the region of Lake Baikal and along the Amur River are steel mills. South of the Caucasus Mountains and far to the north there are other mills. Thus the widely separated market regions are supplied by factories that are near at hand.

## NAMES AND

### DESCRIPTIONS TO MATCH

The following five descriptions tell about industrial areas of the Soviet Union or about places that are important to industry. Each description should suggest one of the names in the list that follows. Can you match the names with the descriptions?

1. A great dam and hydroelectric power plant.

2. An industrial region in southern Siberia, just south of the Trans-Siberian Railroad. Good coking coal is mined here, and there is iron near by. Some of the coal is burned underground to make gas.

3. The centre of the most highly industrialized area in the Soviet Union and the most important railway centre.

4. A coal-mining region in the Ukraine north of the Sea of Azov.

5. An oil region near a range of mountains. Pipe lines carry oil to ports on the Black and Caspian seas.

You will need all but one of the following names: Donets Basin, Moscow, Caucasus, Kuznetsk Basin, Magnitogorsk, Dnepropetrovsk.

## TRANSPORTATION AND TRADE

In a modern industrial country, the transportation system is very important. Raw materials and power must be brought together. Food must be sent to cities, factory products must be distributed. Various kinds of transportation are used. In general, the highway system of the Soviet Union is poor. Railroads are of first importance.

**Transportation by rail.** Railroads have many advantages over other forms of transportation. Heavy and bulky loads can be moved at all seasons. In a fairly level coun-

try, railroads are built in almost straight lines. Those that have two tracks can take care of many trains and make good time. The Trans-Siberian Railroad has two tracks, and trains cross the country, from Leningrad to Vladivostok, in about nine days.

The transportation system of the Soviet Union must serve a vast territory, for almost every part of the country is being industrialized to some extent. With the growth of industry, transportation of all kinds has been improved. Thousands of miles of rails have been laid. But there are many settlements

Flatcars loaded with cotton bales are passed by a passenger train on this double-track line.

*Sovfoto*



A surveyor determining the route for a new railroad to be built in Siberia.

*Sovfoto*







A map showing the railroads of the Soviet Union.

that are much too far away from railroads to make a direct use of them. The map on this page will show you where the chief railroads are located. The network is densest in the west, with Moscow at the centre. You can see that the railroads extend to the leading ports, to the mining regions, to the best-developed agricultural areas, and through some of the forests. Study the map to see how the various regions about which you have read are connected. Name one or more products that you think would be carried on each railroad line. Which lines do you think are used to take cotton to Moscow? Trace this map, then write the name of a product carried on each of the railroad lines.

**Water transportation and power.** Much of the territory that does not have railroads has other means of transportation. You have already seen that there are many large rivers in the Soviet Union. They are used chiefly in moving heavy, bulky materials such as

grain, timber, coal, ore, and petroleum. Sometimes such freight is shipped the entire distance by river. At other times it is shipped by water to a railroad crossing, and then its movement is continued by rail. On page 250 you read about the importance of railways and waterways to Omsk and Novosibirsk. Many towns along the Trans-Siberian Railroad have developed where the railroad crosses a river. Use the physical-political map to find other examples of such locations.

As you have seen on the physical-political map, the large rivers of Siberia have their sources in the highlands of central Asia. From there they flow slowly northward across wide plains and empty into the Arctic Ocean. Because they flow northward, they are of less use for transportation. They flow away from the more thickly settled lands of Siberia and through the sparsely settled regions. These rivers would be of more help in developing the lumber industry if, like the St. Lawrence River, they flowed toward the



market areas of Europe. What other characteristics make these rivers less useful for transportation than they might otherwise be?

Many of the rivers in the western part of the Soviet Union have been improved for transportation. In some places their channels have been deepened by dredging. Dams have been built on several rivers for use in developing hydroelectric power. In some places, locks at the dams make navigation possible; in others, they make it easier. Canals now connect many of the tributaries of the main rivers. Because of the numerous canals, Moscow is sometimes described as the "Port of Five Seas."

**Mother Volga.** You read on page 154 that the Volga is even longer than the Danube. It is the river of greatest importance to the Soviet Union. The people affectionately call it "Mother Volga," because it has been so helpful. You can see on the physical-political map that it does not rise in the mountains. It has its source in the cold marshes south of Leningrad. Slowly it winds southward through a vast plain. The river and its numerous tributaries flow through

the most densely populated section of the Soviet Union. For thousands of miles these waters are navigable. Down the rivers float great quantities of timber, and boats loaded with lumber leave the northern forest lands for the treeless areas of the south. Moving upstream are boats loaded with grain from Ukraine farms, coal from the Donets Basin, and oil from the shores of the Caspian.

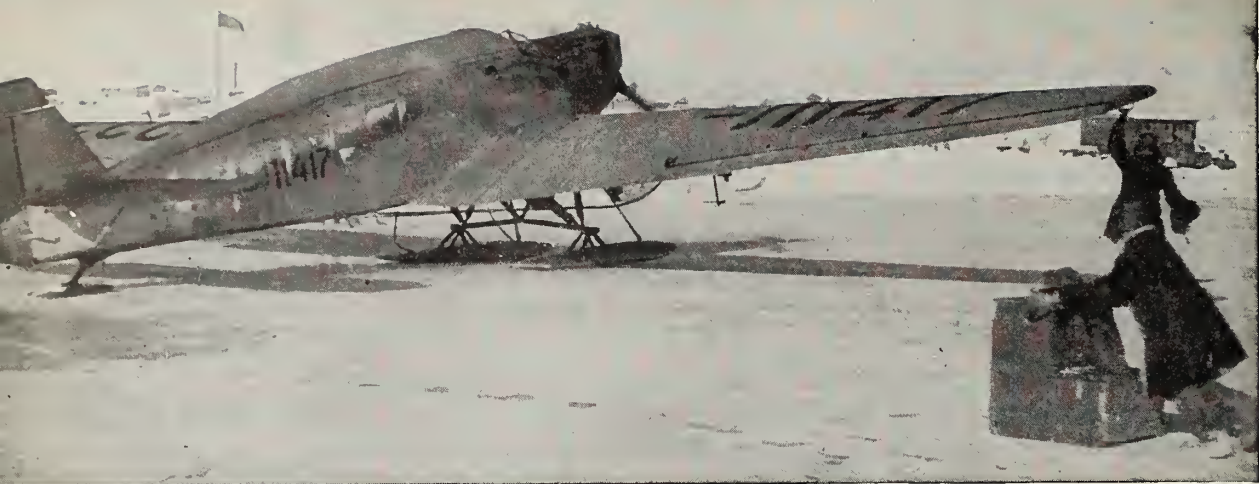
The Volga has been very helpful, but the people think it can help more. They have drawn up plans known as the "Great Volga Scheme"—plans that will further increase the use of this long river. Mother Volga has some important defects. In the spring the lands surrounding the river are flooded. In summer and autumn the Volga is so shallow that navigation is hindered. Lands along the lower Volga are dry. They need the water that the river could supply for irrigation. The Great Volga Scheme calls for dams to regulate the flow of the water, to increase the depth of the water, and to provide power for hydroelectric stations. Water will be pumped from reservoirs to the areas in need of irrigation. Connecting canals will extend the system of waterways. Part of the work that

For thousands of miles the Volga River is used to transport such products as timber, grain, coal, and oil. Gorki is one of the main cities where goods carried on the river can be transferred to railroads.

*Sosfoto*







Sovfoto

Air lines connect all parts of the Soviet Union with Moscow. Passenger planes make regular landings at distant cities, such as Yakutsk far to the east in Siberia, where this picture was taken.

has been planned in the Great Volga Scheme is completed. Much is yet to be done.

Railroads add to traffic on the Volga, and many lines bring and receive river cargo. The chief towns on the Volga are located at the river-railroad junctions. You can see on the physical-political map that three railroad lines meet at Stalingrad. This city has become an important centre for heavy manufactures. What raw materials are brought together here? From what regions are they brought? How is Stalingrad located in respect to the Don River? A small canal connects the Volga and Don rivers at this point.

**Using air transportation.** The people of the Soviet Union, like our own people, are making great progress in aviation. There are several reasons why both countries are especially interested in developing transportation by air. Airplanes can travel faster and follow shorter routes than trains or boats. Airplanes can carry people, mail, and small quantities of freight to distant places to which it would be difficult to build railroads. They can land on the frozen tundra in winter and on its marshes in summer. They can guide ships in dangerous Arctic waters by locating the best channels through the floating ice.

Air lines link Moscow with all parts of the Soviet Union. It is possible to fly from Moscow to the shores of the Bering Sea, 4500 miles away. If you were to fly this route, you might make landings at Arkhangelsk and Igarka and finally on the shores of the peninsula just across the Bering Sea from Alaska. Turn to the physical-political map and trace this air route.

**Internal and foreign trade.** Most of the trade of the Soviet Union is *internal*. It takes place within the country itself. The different regions and republics exchange the materials they have for those they need. The country is so large and has such a variety of crops, natural resources, and manufactured articles that it is not so dependent upon foreign lands for supplies as are many other countries.

The Soviet Union has an important place in the timber industry of the world. With the increase in sawmills, more lumber, plywood, and wood pulp are being manufactured. Before World War II, petroleum products, metals, machinery, chemicals, and coal were the important exports. Almost all the trading in these products was with European countries. As the Soviet Union has developed its industries, fewer things have been imported. The imports include machine

tools, a variety of metals, electrical equipment, wool, and rubber.

The Soviet Union has many ports, but they are not entirely satisfactory. They cannot compare with Liverpool, or Hamburg, or Marseille. You know that many seaports of the Soviet Union are far to the north. They are inconveniently located in relation to the world trade routes. Turn to the map on page 85 to see just how the north coast of the Soviet Union is located in relation to the great ocean trade routes. Ships leaving the Arctic ports of the Soviet Union have a long way to go to reach the countries of industrial

western Europe or of eastern Asia. Trace the routes such ships would have to follow. Ports on the Baltic and Black seas are nearer great trade routes, but they are also at a disadvantage. Both of these seas may easily be closed to the Soviet Union by unfriendly nations.

For a long time the Soviet Union had only a small merchant marine. It depended upon the ships of Great Britain, Greece, and other countries engaged in the carrying trade for the movement of its exports. Now, however, the Soviet Union merchant marine is steadily growing, and more and more foreign trade is handled by Soviet vessels.

## THE GEOGRAPHY WORKSHOP

Your Natural Environment group should draw a large map of that part of the world that lies north of 35° north latitude. On it mark the North Pole, the Arctic Circle, the Arctic Ocean, Canada, and the Soviet Union. Color the following vegetation regions: the tundra, the cone-bearing forest, the broad-leaf forest, the grasslands, and the desert. Use the maps on pages 5 and 16-17 to locate these regions. Use a different color for each region.

What vegetation regions are located in both Canada and the Soviet Union? It is interesting to note that Canada and the Soviet Union together contain a very large share of the world's cone-bearing forest.

If you can obtain a copy of a large atlas like Goode's *School Atlas*, study the temperature maps. Note especially the July temperature map and the line on it that shows a July normal temperature of 60°. You can find farming carried on south of this line, but few crops will grow north of it.

Your History group should compare the exploration and development of Russia and Canada. They will note that Russia developed largely from west to east and that Canada grew from east to west. In both countries the earliest explorers were fur traders. Following the fur traders came the farmers. Last of all came the industrial workers.

In both countries today the frontier is in the north. That is the direction in which

pioneer settlers are moving. As both nations move northward, their people come closer together. Explain how improvements in methods of travel are bringing the two countries nearer together.

### I. THE WORLD

#### IN YOUR OWN COMMUNITY

If you were to fly straight from your home northward to the North Pole and then continue southward along the same line of flight, what country would you reach first, after you had crossed the pole? Would this be true for any part of Canada?

What part of the Soviet Union is nearest your home by great-circle distance? How far away is it? How far from your home are Moscow and Vladivostok? Find other places in the world which are about the same distances from your home.

#### *People you would like to meet*

If you live in a large city you may be able to find someone who came from the lands that are now part of the Soviet Union, or whose ancestors came from there. Even in a smaller community you may be able to find someone, for Russians are widely scattered in all parts of Canada. If you do find a Russian, ask him to speak a few words of the language for you. Perhaps he can tell you a Russian story, sing a Russian song, or show you the steps of a Russian dance.



You may be able to find a war veteran who saw some part of the Soviet Union. Not many Canadian soldiers and sailors were in the Soviet Union, but many of them met large numbers of Russian people.

### *What we get from the Soviet Union*

Canada does not get a great deal from the Soviet Union, because the two countries are much alike, and what Russia produces, Canada does also. Northern Russia, like northern Canada, consists mainly of hard rocks that are veined with gold, silver, platinum, nickel, lead, and zinc. Both countries are covered from west to east by a great mantle of cone-bearing forests. They both have large prairies, which are famous for their golden harvests of wheat, and their cattle and sheep.

You have already learned about the important place of reindeer in the lives of the people in the Arctic regions of Scandinavia and Soviet Russia. In 1933 Canada's first herd of reindeer was brought to the Mackenzie Valley from Alaska. The Alaskan reindeer had come from Lapland at the beginning of the present century. Several Lapps helped to bring the reindeer to Canada. It has not been easy to persuade the Eskimos to take on the responsibilities of caring for the reindeer. However, the reindeer are increasing in numbers and some day may help to make life better for Canadian Eskimos.

If you live in the wheat belt, something from Russia may have been very important to your community. The varieties of wheat brought to Canada by the early settlers were suited to the climate of northwestern Europe. The same varieties of wheat did very well in the eastern sections of this country, but they were not suited to the drier weather of the lands farther west. In some years the crop was lost because there was not enough rain. In many years it was lost because of plant diseases.

Scientists doing research work in agriculture decided to help the wheat farmers by finding varieties of wheat suited to their climate. Where do you suppose they found such varieties? They found some of them in the dry wheat lands near the Black Sea. If you live in the wheat belt, find out whether any of these Russian varieties helped the farmers of your community.

A man in Glasgow, Scotland, saw some European wheat being unloaded from a ship.

This wheat had come either from the Ukraine or from a part of Poland that was then controlled by Russia. He took some of it home in his hat. He then sent the wheat to his friend, David Fife, who was farming at Peterborough, Ontario. When David Fife sowed this wheat, only one plant turned out to be spring wheat. After a few years the seed from this one plant gave Fife more than enough for his entire farm. Later, when it was grown across Canada and the United States, it was called Red Fife. Dr. Saunders later crossed Red Fife with Hard Red Calcutta, an early ripening wheat from northern India. From this came the famous Marquis wheat.

### *Literature and music*

There have been many famous Russian writers whose works grownups like to read. Most of the books are hard reading, and you will probably not enjoy them until you are older. There are many delightful Russian folk tales, however. You may be able to find some of them in your school library or public library. Read them for enjoyment, but notice also the kind of country they describe.

If you have an opportunity, listen to music by the great Russian composers Tchaikovsky, Borodin, Rimski-Korsakov, and Shostakovich. You have probably heard music by all of them on the radio or on records.

### *A region like home*

Turn back to pages 16-17 and find the vegetation region in which your own home is located. Now find the parts of the Soviet Union which have the same kind of natural vegetation as your region. Show these regions on an outline map. You may trace one from the world map on page 376.

Now find the parts of the Soviet Union with about the same rainfall as your own community. Outline them in color on your map. Do the same for the length of growing season.

Your map now shows three important features of the natural environment. Is any part of the Soviet Union like your own home in all three? If not, you will certainly be able to find a place that is like your home in at least vegetation and rainfall. Compare the altitude of this region with the altitude of your own community. How do the two areas compare in latitude?

You are now ready to point out one or more regions in the Soviet Union which are

much like your own community in natural environment. Each member of the class will need his own outline map for this. You may work in groups on the rest of this activity.

You are ready now to compare the social environment of your own community with the social environment of the similar region in the Soviet Union. Pupils who have been working on the social environment of your own community can supply information.

Begin your study of the social environment by looking at the population map. Density of population, the number of people who live on the land, is an important part of the social environment. How does the population of the region you live in compare with the population of the region you are studying in the Soviet Union?

You know what is produced in your own community. Use the maps in this book to find out what is produced in the Soviet region you are comparing. Suppose, for example, you live in a region of broadleaf forest with a rainfall between 20 and 40 inches and a growing season of 4 to 6 months. You find a similar region in the western part of the Soviet Union. The map on page 79 tells you that rye production is heavy in this region. Do the farmers of your home region produce much rye? Thus you can go on comparing crop after crop. To find all the product maps, look under "Maps" in the Index of this book.

When you have finished your comparisons, prepare a class report on what you have learned. Suggest any reasons you can think of for the differences you find. Your reasons may have something to do with transportation, markets, the coldness of the winters, or density of population. You may not be able to find any reason for difference in products. Custom has much to do with the crops farmers choose to raise.

## II. SOVIET PLACE NAMES

Are Soviet place names hard for you to remember? Perhaps you can make them seem as simple as Charlottetown, Brantford, or Port Arthur. Like these, many Soviet names are made up of the name of a person plus something that means town. You will find places named for the famous Russians Stalin and Lenin. In some names you will find the name of a river. In others you will recognize personal names such as Peter (Petr), Paul (Pavl), Serge, Nicholas (Nikolai). For examples of how places may be named,

find the Kolyma River far to the east in Asia. On this river you see three towns, Nizhne Kolymsk, Sredne Kolymsk, and Verkhne Kolymsk. In Russian the ending "sk" means that a word is the name of a town, and "Nizhne" means "lower," "sredne" means "middle," and "verkhne" means "upper."

Here is a game of finding names of Soviet cities. Following this paragraph is a list of words with their meanings in English. Some of the words are Russian and some are from other languages spoken in the Soviet Union. All are used as part of one or more place names on your map of the Soviet Union, pages 234-235. The class may have a race to see who can find the largest number of names in which these words are used. Write each name down as you find it. Before you start, decide upon a length of time for the race—perhaps ten or fifteen minutes.

|                             |               |
|-----------------------------|---------------|
| abad—inhabited              | lakh—place    |
| balka—valley                | more—sea      |
| darya—river                 | nizhne—lower  |
| gorod—town                  | nor—lake      |
| grad—town                   | nova—new      |
| issuk—warmer                | pol—city      |
| kand—village                | samar—road    |
| kend <i>or</i> kent—village | sredne—middle |
| khan <i>or</i> kan—market   | tash—stone    |
| khara <i>or</i> kara—black  | ulan—red      |
| krasno—red                  | verkh—a peak  |
| kul—lake                    | verkhne—upper |
| kum—sand                    | vostok—east   |
| kurgan—fort                 | yar—cliff     |
| kysyl <i>or</i> ksil—red    |               |

## III. SOVIET UNION IN THE NEWS

In your newspapers you will find many articles with a Moscow date line. You will also find articles in newspapers and magazines about various parts of the country, about crops and industries, or about new

Sovfoto





railroads and power projects. Look especially for information indicating that the country is becoming more highly industrialized.

#### IV. WHICH VEGETATION REGION?

The picture on page 265 was taken on a state farm in the Soviet Union. It was taken near Omsk. Omsk is almost on the dividing line between two vegetation regions. Judging from the picture itself, do you think the scene is north or south of Omsk?

#### V. COULD THIS BE IN THE SOVIET UNION?

Imagine you have five pictures showing the scenes described below. How many of them could have been taken in the Soviet Union? When you decide that a picture belongs in the Soviet Union, decide also in which of the four large regions it is most likely to have been taken.

1. A huge wheat field stretches away over gently rolling hills. A combine, pulled by a tractor, is at work harvesting the grain.

2. A hilly stretch of dry-looking grass. A shepherd is watching a large flock of sheep.

3. A cotton field with irrigation ditches running through it.

4. Lumbermen working in a thick forest.

5. A man watching a herd of reindeer. The ground is thinly covered with snow, and the man is wearing fur clothing.

#### VI. SOVIET SEAPORTS

You have learned that the seaports of the Soviet Union are not entirely satisfactory for world trade. Match each port in the list with the correct reason why it is unsatisfactory. Use any maps you wish.

|           |             |
|-----------|-------------|
| Murmansk  | Vladivostok |
| Baku      | Odessa      |
| Leningrad |             |

1. The port is on a long gulf which opens off a narrow sea. Ships must make a long journey to reach the busy Atlantic trade routes. The harbor freezes in winter.

2. The port is on a sea that is entirely surrounded by land.

3. The port can be reached only by a route far to the north. Although the harbor does not freeze, a ship must go through cold, stormy, dangerous waters to reach it. It is hundreds of miles by rail from the densely populated parts of the country.

4. The port is several thousand miles by railroad from the densely populated industrial regions of the country.

5. The port is a long way from the open ocean. To reach it from the Atlantic a ship must travel through three large seas, one small sea, and three straits.

#### VII. PROBLEMS

##### FOR CLASS DISCUSSION

Your class may divide itself into groups to study the following problems. Then each group may discuss its own problem with the rest of the class as audience.

1. On a globe, measure the great-circle distance from Odessa to Vladivostok and the same distance straight south from Murmansk. Imagine the Soviet Union turned around, with its greatest extent north and south instead of east and west. What differences would this make in the life of the people? Would the country have greater or less variety in climate and vegetation? Would transportation be easier or more difficult? Would the country be in a better or a worse position for trade with other countries? Would more or less of the country be good for farming?

2. The Soviet Union is a large country, but some parts are much more valuable than others. Imagine you have been asked to select for special development an area exactly the size and shape of Canada.

From a globe trace on a piece of paper the boundaries of Canada. Then cut out the map you have traced and lay it over the Soviet Union on the globe. Turn it any way you wish. You will want the region you select to include a wide variety of crops and other resources. You will want it to include means of transportation, seaports, and sources of power.

3. In Canada most of our industries are owned and operated by private persons. Usually our government assumes responsibility for industry only when the welfare of the people in general is concerned. In the Soviet Union, however, the government not only owns all the resources but also maintains careful control over the occupations of all the people. Everyone in earning a living works under government supervision. List the occupations of the parents of your class. Discuss how the working conditions of your parents might be changed if they were ruled by a government like that of the Soviet Union.



## *Living in Eastern Asia*

### OLD NATIONS IN A NEW WORLD

Most of the early traders and explorers who visited eastern Asia came from the lands in the western part of Eurasia. The overland routes which they followed to the Far East were long and dangerous. They led over windy deserts, through high mountain ranges, and across desolate plateaus. But silks and teas and other luxuries lured many caravans of traders and many explorers. Among the early visitors was Marco Polo, who brought back to Europe stories of strange lands and peoples. Some parts of eastern Asia have changed little since those early days. Other parts have adopted ideas and ways of living from western countries.

**The people of eastern Asia.** The countries of eastern Asia are old. They were settled centuries ago by Mongolians. Today we seldom speak of the people there as Mongolians, however. We name them by the country or province in which they live. Most of them are spoken of as the Chinese, the Japanese, the Koreans, or the Manchurians. One of the parts of eastern Asia is called Mongolia, and the people who live there are usually referred to as Mongolians. It would be a good idea to read again the discussion about Mongolians on page 42.

Parts of eastern Asia are very densely populated. China is about as large as Canada



but has more than thirty times as many people. Most of the people are crowded together on the better lands, where they can farm. In densely populated European lands and in some parts of eastern Asia, work in mines and factories makes people less dependent upon the land. Where this is so, more of the comforts of everyday living are possible for the masses of people. Japan is a very densely populated country, too, but there is not so much dependence upon farming, for the Japanese follow many other occupations.

**Study guides.** Most of the people of eastern Asia live by working on the land, so the geography of that part of the world tells a lot about the way people live. Think about the questions that follow, and look for answers to them as you read the unit.

1. Why is the population of eastern Asia so unevenly distributed? (III)

2. How does farming in eastern Asia differ from farming in industrial western Europe? Why are the best farm lands of eastern Asia divided into very small farms, intensively cultivated? Why do the farmers in this part of the world use most of their land for food crops? (II, V, VI, VII)

3. What parts of eastern Asia are most highly industrialized? Would the people of this region be better off if it had more manufacturing? Why is this so? Does it have the raw materials that would make more industries possible? Does it have possible sources of power? (I, IV, VI, VII)

4. What kinds of transportation are used in eastern Asia? How would improvements in transportation help the people to make a better living? (VI, VII)

5. What kinds of trade are carried on within eastern Asia? What kinds of trade are carried on between the countries of eastern Asia and other countries? (I, IV)

6. People in the densely populated regions of Europe make a better living than people in the densely populated regions of eastern Asia. What are some of the reasons why this is true? (II, V, VII)

## WHAT WE CAN READ FROM MAPS

### LOCATING THE COUNTRIES OF EASTERN ASIA

1. Find China on the physical-political map on pages 270–271. It extends westward from the Pacific to the centre of Asia. The name “China” is usually used to refer to the southeastern part of this large country. Look again at the map on pages 270–271 and find the regions labelled Inner Mongolia, Sinkiang, and Tibet. These three regions are provinces of China. They are referred to as Outer China. Another province, called Manchuria, is located northeast of China.

2. North of the province of Inner Mongolia is the independent country of Mongolia.

3. Japan includes four large islands: Hokkaido, Honshu, Shikoku, and Kyushu. Which island is the largest? How does Japan compare in size with China?

4. Find the large peninsula that extends from Manchuria between China and Japan. What is its name? What seas are on either side of it? How far is Korea from Japan?

### RIVERS AND MOUNTAINS

1. On the physical-political map find the altitude of lands in eastern Asia. Notice that most of the land is high. Where are the highest lands?

2. In northern China the Chinese name for river is “ho.” In southern China it is “kiang.” In this book you will find the Chinese name the first time a river is mentioned. After that the word river will be used. China has four rivers that have a great influence on the lives of the people who live near them. Look at each of these rivers on the physical-political map. In southern Manchuria find the Liao Ho.

3. The Hwang Ho is in North China. Find its source in the Plateau of Tibet. Trace it eastward to the Yellow Sea.

4. The Yangtze Kiang is the most-used river of China. The source of this river is not far from the source of the Hwang River, in the Plateau of Tibet. The Yangtze River and most of its tributaries are navigable for

great distances. . China's largest port, Shanghai, is near its mouth. The Yangtze River is navigable for large ocean freighters as far as Hankow. This city is about seven hundred miles up the river.

Farther south is the short but navigable Si Kiang. Locate Canton, the large city near its mouth. Also locate the British colony, Hong Kong. It is a short distance southeast of Canton.

5. Japan has many short, swift rivers. Of what use can such rivers be?

## CLIMATE AND VEGETATION

To answer the following questions, use any maps that will help you.

1. What parts of eastern Asia have more than 60 inches of rainfall a year? How does the amount of rainfall in China change from southeast to northwest? What part of Japan has the heaviest rainfall?

2. Most of the rainfall of eastern Asia comes in the summer. At that time the winds blow from the Pacific Ocean. From what direction do they blow? In winter the winds are from the west and northwest. Why do these winds bring less rain?

3. On the map on pages 14–15 find the valley of the Hwang River. How does the growing season in the valley of the Hwang change from west to east? How long is the growing season near the mouth of the river?

4. How long is the growing season in most of the Yangtze Valley?

5. Do you remember where the Si River is located? It is not shown on this map. How long is the growing season in the Si Valley?



*Ewing Galloway*

From Tchang westward, long stretches of the Yangtze River are bordered by steep mountains with a few tiny, scattered farms.

6. Find Manchuria on the growing-season map. What part of Canada has the same length of growing season?

7. Follow the Tropic of Cancer across China on the physical-political map. What kind of natural vegetation would you expect to find in parts of southern China where the land is not used for farming?

## WHERE THE PEOPLE LIVE

Look at the map on pages 18–19. What parts of eastern Asia are most densely settled? Are these areas highlands or lowlands? Where do the fewest people live? Do these lands have much rain? Compare the lengths of the growing seasons in the highlands and in the lowlands.

## CHINA—AN OLD BUT CHANGING NATION

Some say that Chinese civilization began thousands of years ago near the site of Sian, which you can see on the physical-political map. Sian is a city on a tributary of the Hwang River. From this centre the Chinese moved outward and occupied and improved other lowlands of China. Over a long period

of time they developed customs, styles of architecture, tools, crops, and works of art that were distinctly Chinese. Their ways of living continued in much the same way for many generations. They did not want to change, for they worshipped their ancestors. Traders from western countries had little





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A physical-political map of southeastern Asia.





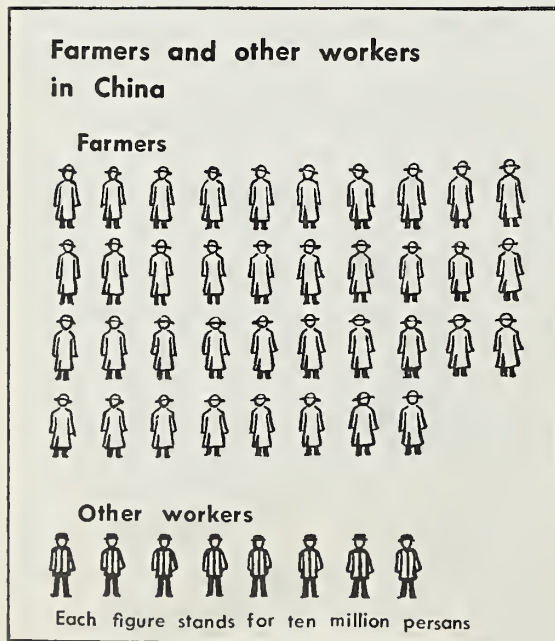


influence upon them. To keep everything the same, walls were built around their homes and their cities. With the Great Wall they hoped to protect their country on the north, where there were no natural barriers. They wished to be by themselves.

Finally foreigners began to settle in China. They built factories and railroads and opened mines. In the large cities there are many banks, offices, factories, and hotels that have been built by foreign companies. Now the Chinese people are becoming more progressive. Many of them want China to become a modern nation.

## A Land of Farmers

China, a land of farmers, is divided into two regions, South China and North China. The graph on this page tells how many farmers there are. Much of China is not good for farming because it is too dry or too mountainous. As a result, the lands suitable for farming are very crowded. The farms have become smaller and smaller. Now the average farm contains only about four acres.



Do you think this picture will change soon?

Ways of living in South China are different from those in North China. This is because the natural environments are different. Most of the boundary between South China and North China follows the Tsinling Shan. *Shan* is the Chinese word for "mountain range." Turn to the map on pages 270-271 and follow this range across China.

**Intensive farming.** Only by very intensive farming can a Chinese farmer and his family make a living. As much land as possible must be cultivated. To save space, the farmers get along without fences, roads, pastures, and barnyards. Much of the lowland is irrigated, and many of the hillsides are terraced. To get as much food as they can, Chinese farmers raise two or three crops on the same land each year. In South China, where the growing season is long, a late crop of rice may be planted between the rows of an early crop that is almost ready for harvest. The early crop is harvested in July and the late crop in October or November. A crop of vegetables may be grown after this.

In North China, where the growing season is much shorter, cotton is grown in the summer and wheat in the winter. To provide enough time for growing, the cotton seeds are planted between the rows of wheat before it is ready for harvest. Growing two crops in the same field in this way is called *interculture*. Such farming is possible when hand tools are used and the land is fertilized.

**The importance of weather.** With all their work and planning, it is not possible for Chinese farmers to grow sufficient food if there is not plenty of summer rain. The amount of rain and the time when it falls are very important to these farmers.

The rainfall depends upon the direction of the winds. In winter, the winds blow out from the cold regions near the centre of Eurasia and so bring very little rain. During the summer, the winds blow in from the ocean toward the hot central part of the continent and bring much rain. Rain is



Alexanderson (CNS) from Paul Guillet, Inc.

The Chinese farmer on the left is planting rice seedlings while the harvested wheat crop on the right is still being gathered. When the wheat is gathered, this field also will be flooded for rice planting.

most abundant where the air is cooled as it is forced up and over mountain slopes. These winds that change their direction with the seasons are called *monsoons*. Regions where such seasonal winds blow and affect the climate are called *monsoon lands*.

Monsoon rains are not always the same. From year to year there is a good deal of difference in the time and in the amount of rainfall. If the rains are late in coming, early crops may be injured by drought. If the rains are early in coming, planting may be delayed. If there is too much rain, rivers may flood the farm lands and crops may be destroyed. All these things are very serious matters to the farmers who have to use every bit of land so carefully in order to raise enough food for their families each year.

**The farm animals.** In crowded China, farmers produce as much food as they can. They grow crops to feed the people, but they do not raise many animals to provide meat or dairy products or to work on the farms. They need animals, but they cannot afford to feed them. All the grain is needed for food. The native grasses are not good for pasture, so that hilly land is not used for cattle or for grazing sheep. Each family usually keeps a few pigs and chickens. They are kept in the yard and eat waste from the kitchen. The farmer and his family seldom have eggs to eat. They save the eggs to sell. There are so many families selling eggs that they are one of the most important exports of China. Chinese labor is cheap, but both land and money are very scarce.



## AN OUTLINE TO MAKE

The section you have just studied is about China in general. The things you have learned are true nearly everywhere in the country, and you should have them in mind as you read each of the later sections. An outline of the part you have read will be useful as a reminder. Write down the head-

ings like this, being careful to indent the headings as you see them here.

CHINA—AN OLD BUT CHANGING NATION  
A Land of Farmers  
Intensive farming  
The importance of weather

Go on until you have used all the headings up to this point. Keep this for use later.

## LIVING IN SOUTH CHINA

In South China there are three lowlands. They are the basin of Szechwan, called the Red Basin, the lower Yangtze Valley, and the Si Valley. The lowlands are separated by hilly or mountainous regions. The largest area of mountainous land lies between the Yangtze and the Si. We may think of it as having two sections, the southeastern highlands and the southwestern highlands. As we shall see, these two areas of highlands are different from each other in soil, climate, and crops.

### The Red Basin of Szechwan

China is divided into a number of large provinces, just as our country is. One of these provinces is called Szechwan. It is in the Yangtze Valley, more than a thousand miles from the sea. The cities of Chungking and Chengtu, which you can locate on the physical-political map, are in this province. Probably as many as one-eighth of all the people of China live in Szechwan.

A lowland rimmed by mountains occupies more than half of Szechwan. This lowland is called the Red Basin because much of its soil is red in color. The Red Basin is separated from the lower Yangtze Plain by mountains. Through these mountains the Yangtze with its many rapids has cut a deep, narrow gorge through which the river dashes. The gorge begins at Ichang, which, as you can see, is about three hundred miles up the river from Hankow. It continues westward almost to Chungking. Mountains

have shut the Red Basin away from other parts of China. The Chinese living in this part of the country were almost strangers to the people living in the lower part of the valley. They had very little to do with each other. In fact, not until their war with Japan did the Chinese learn how valuable this province is. As the Japanese army swarmed over the eastern parts of the country, the government of China and many of the Chinese people fled up the Yangtze Valley. They moved through the wild gorge of the river along narrow roads and into the Red Basin. The government was established at Chungking. Through eight long years while the country was at war, the small area comprising the Red Basin was forced to support more than 40,000,000 people.

**Farming in the Red Basin.** Because of the good climatic conditions and fairly good soil of the Red Basin, the people raise the crops they need. Here, as in many other parts of China, *subsistence farming* is carried on. Subsistence farming is farming which provides only the food necessary for the farmer's family to live. In the Red Basin, the farmers live on the land and work the land, and the land feeds them. It may also clothe them, for many farmers grow cotton.

The climate is surprisingly warm. Snow and ice are rare. It is so warm and the frost-free season is so long that crops can grow the year round. The Red Basin is protected from the cold north winds by the Tsinling Shan and the high Plateau of Tibet.



*CNS from Paul Guillemette, Inc.*

**This is a fertile and intensively farmed valley that lies between mountain ranges in Szechwan. Notice the crops of grain in the foreground of the picture, and the many rice paddies on the terraced land.**

The rainfall in the Red Basin is abundant. It averages about 40 inches a year, and much of it comes in summer. There is, however, enough rain in winter for crops to continue their growth. Old but very efficient irrigation systems supply water to the crops when they need it.

The red soil is naturally fertile. Level areas are carefully cultivated, and the low hills are covered with terraced fields. Many different crops can be raised. Crops grown anywhere else in China can be grown in Szechwan. This is true not only of field crops but of tree crops as well.

The lowlands are used for growing rice, wheat, bananas, and sugar cane. Rice is the most important food crop. Wheat, beans, sweet potatoes, corn, and peanuts are also used by the farmers for food. Irish potatoes are grown in the mountains, where the

weather is cooler. Cotton, sugar cane, tea, tobacco, and tung oil are the crops that are sold. Study the rice and tea maps on pages 280 and 281. Look especially at the Red Basin area.

The low slopes also are usually covered with rice fields. Mulberry trees grow on some of the hillier lands, and silk is one of the chief products. Tung oil is obtained from the seeds of the tung tree and exported to Canada and many other countries. It is used in making paint, varnish, and linoleum.

As you can see in the picture above, the farmers of South China terrace their rice fields by building earthen banks around them. In doing this they prevent the valuable topsoil from being washed away. They work ceaselessly to return all available fertilizer to the soil. They are practising effective soil conservation.





*Alexanderson (CNS) from Paul Guillemette, Inc.*

This is part of Chungking as it looks from an airplane. The small piece of flat land in the river is an airfield. Notice how every bit of land between the mountains and the shore is crowded with buildings.

**Cities of Szechwan.** This province has many cities. Every division or county has a large market town where crops and goods are sold. Many of the things the farmers need are made in Szechwan. The products they make are usually simple in design and construction. Most of these market towns are located on rivers. Boats on the rivers are the chief means of transporting products.

Chungking, the largest city in Szechwan, stands on high land overlooking the Yangtze. There a tributary joins the main stream, as you can see on the map. This location has helped to make Chungking a busy trading centre. Mineral deposits near the city have helped it to become a manufacturing centre.

## The Yangtze Plain

The Yangtze Plain does not occupy a very large part of China, but every part of it is crowded. In some of the most densely settled parts, as many as 2500 people live on a

square mile of land, not to mention the pigs, chickens, and donkeys that share the land with the people.

**Crowded farm lands.** In no other part of China is a larger part of the land in cultivation. In no other part of the world is it farmed with greater care. Much land is used for growing rice and wheat. Rice is the summer crop, and wheat is the important winter crop. You know that rice requires an abundance of water. It requires rain on the growing plants as well as water in the soil. The rice fields are flooded with water from the river. The water for irrigation is usually lifted by chain pumps, or "dragon wheels," worked by water buffaloes or by men. There are no modern irrigation works.

Cotton growing is becoming more and more important. In fact, the Yangtze Plain produces more cotton than any other part of China. The cotton is not of high quality, for the better land is used for food crops.





*Courtesy United China Relief, Inc.*

In the background of this picture, farmers are using "dragon wheels" to lift water onto a garden plot. The farmer on the left is opening the irrigation ditches to let the water spread out over the field.

Large areas in the Yangtze Delta are used for growing mulberry trees to supply leaves for silkworms. In some places as much as a third of the land is used for these trees. To get large crops of leaves, the farmers fertilize the trees with mud scooped up from the bottoms of the numerous canals that cross the delta. The yield of silk is not so high as in parts of the world where greater care is taken to avoid the use of diseased eggs.

**The use of the Yangtze.** The Yangtze River has built up a low, fertile plain where millions of people live. No railroads run from east to west in this thickly settled valley. The river is the great highway for trade and travel, for the people of this densely populated region need cheap transportation. The Yangtze and its numerous branches serve a very large area. These rivers are long, and they flow in the direction in which traffic must move. Tributary streams bring cargo to the Yangtze from

both north and south. The lower Yangtze is so deep that ocean ships come up the river as far as the city of Hankow, seven hundred miles from the sea. Large river steamers can travel above Hankow all the way to the gorge which begins at Ichang. You will remember that this city is the gateway through the mountain rim to the Red Basin. Flat-bottomed boats pass through the rushing waters of the gorge and continue on to Chungking, almost fourteen hundred miles from the sea. Sometimes they must be pulled up the rapids. Thousands of large and small river steamers, junks, and sampans pass up and down the river and its branches.

The river is not always good for transportation. Sometimes floods rage down its valley and cause great damage as the water spreads out over the low land. In some of these terrible floods not only houses, barns, and crops are destroyed, but thousands of people are drowned. The floods come in summer, when China has the heaviest rain-



fall and when the rice is being grown. The loss of a rice crop is a very serious matter, for this is by far the most important grain crop. It feeds millions of people.

## Cities in a Land of Farmers

About three-fourths of the people in the Yangtze Valley are farmers. Yet this region has more big cities than any other part of China. Not only are they large, but they are more modern than most Chinese cities.

**Shanghai—gateway to Yangtze Valley.** Shanghai's population is nearly 4,000,000. It is the second-largest city in Asia and one of the greatest cities of the world. It is the centre of China's commerce.

Shanghai has become very large chiefly because it is the gateway to the fertile and densely populated Yangtze Valley. The millions of people living on this plain help to make Shanghai a commercial centre. The traffic from the entire Yangtze Valley comes

down the many tributaries to the Yangtze and down the main river to Shanghai. Most of China's foreign trade is carried on through this seaport and through the river and its branches. Imports are distributed to all of central China.

More foreigners live in Shanghai than in any other Chinese city. The Chinese area in Shanghai is enclosed by an old wall. It is much like other Chinese cities. The narrow streets are lined with little shops, and the houses are crowded close together.

Shanghai is not on the mouth of the Yangtze. Sand bars make the mouth of that river too shallow for large boats. The city is built on flat, muddy land fourteen miles from the Yangtze on a tributary, the Whangpoo. The winding Whangpoo has been deepened so that ocean steamers can come up to the city. Both banks of this river are used for wharves and warehouses. Shanghai is chiefly a commercial centre, but it also has many factories, some modern, others only small workshops. Within the city, the fac-

**Here, lined up along the river front, are some of the largest and most modern buildings in Shanghai. Along the piers on the river you can see hundreds of fishing boats and houseboats.**

*Piz Publishing, Inc.*



tories are located where they can use transportation by river, canal, or railroad. There are cotton mills, shipbuilding yards, flour mills, and factories for reeling silk. With what other cities does Shanghai have railroad connections? About how far is it from Shanghai to Japan? Is this an advantage in times of peace?

Other large and busy cities on the Yangtze Delta are Hangchow and Soochow. Find these on the map. Notice that they are near Shanghai and have rail connections with it.

**Nanking, an ancient capital of China.** The name “Nanking” means “southern capital.” In the last seventeen centuries Nanking has been capital of China many times. It has shared this honor with half a dozen other Chinese cities. In recent centuries Peking was the capital until 1928 when the seat of government was once again moved to Nanking. A few years ago the Chinese Communists forced the Nationalist Chinese to withdraw to the island of Formosa. The Communists have set up their capital at Peking.

## The Si River Valley

The Tropic of Cancer crosses the Si River Valley. Here the sun will be directly overhead on June 21. As you have seen on the growing-season map, crops can be grown the year round. How long is the growing season in this part of China? How does the rainfall compare with that in other parts?

**A tropical region.** The Si Valley is to southern China what the Yangtze Valley is to central China. It is another crowded region where millions of farmers cultivate small patches of ground. Because of its long, wet summers, two crops of rice a year can be grown on the same piece of land. One crop is harvested in June and the other in November. In this tropical region, sweet potatoes, sugar cane, oranges, pineapples, olives, and bananas are grown in low altitudes. Bamboo

is one of the most important plants. Although the region is densely populated, as the map on pages 18–19 shows, food production is so abundant that usually everyone has enough to eat. This is not true of all parts of China, as we shall see. On the delta of the Si and in some parts of its valley the farmers use much of their land for mulberry trees and produce a fine grade of silk. Some also cover a large part of their land with ponds in which they raise fish

**Canton, the first open door.** About four centuries ago a Portuguese ship which had sailed around southern Africa, across the Indian Ocean, and through the South China Sea came into the harbor of Canton. Although the Portuguese had come as uninited guests, the Chinese traded with them. They exchanged silk, tea, and rice for whatever the foreigners had to offer. Soon other Europeans followed the Portuguese. They, too, sailed up the river to Canton and soon established trading posts in that city.

Canton was the first Chinese city to carry on trade with foreign peoples. From these outsiders the Chinese learned new ways of living. Many Cantonese have gone to school in foreign countries. Some have become merchants in other countries. They have brought back new ideas and have helped in changing the city. Many old buildings and the old wall which surrounded Canton have been torn down. Some of the streets have been widened and paved. A modern boulevard has taken the place of the old wall. A few automobiles and streetcars mingle with the jinrickshas. You have likely seen pictures of these jinrickshas. They are small two-wheeled carriages pulled by men. There are modern stores, office buildings, hotels, and a university.

Not all of Canton is modern. There is an old and interesting part where the streets are very narrow and lined with one-story houses and small shops and stores. Day and night the streets are filled with people. Canton is so crowded that almost half a million



people are forced to live in houseboats on the river. All their lives are spent on the boats. They rarely go ashore. The children, cats, and chickens are tied to the boats so they may be easily rescued if they fall overboard. Many boats are used for fishing. Others are used as factories where small articles are produced to sell. Some of the people who live in boats are merchants. They sell hot food, hot water, and other things. Some of these boats are well built and beautifully decorated, but most of them are crudely built and old.

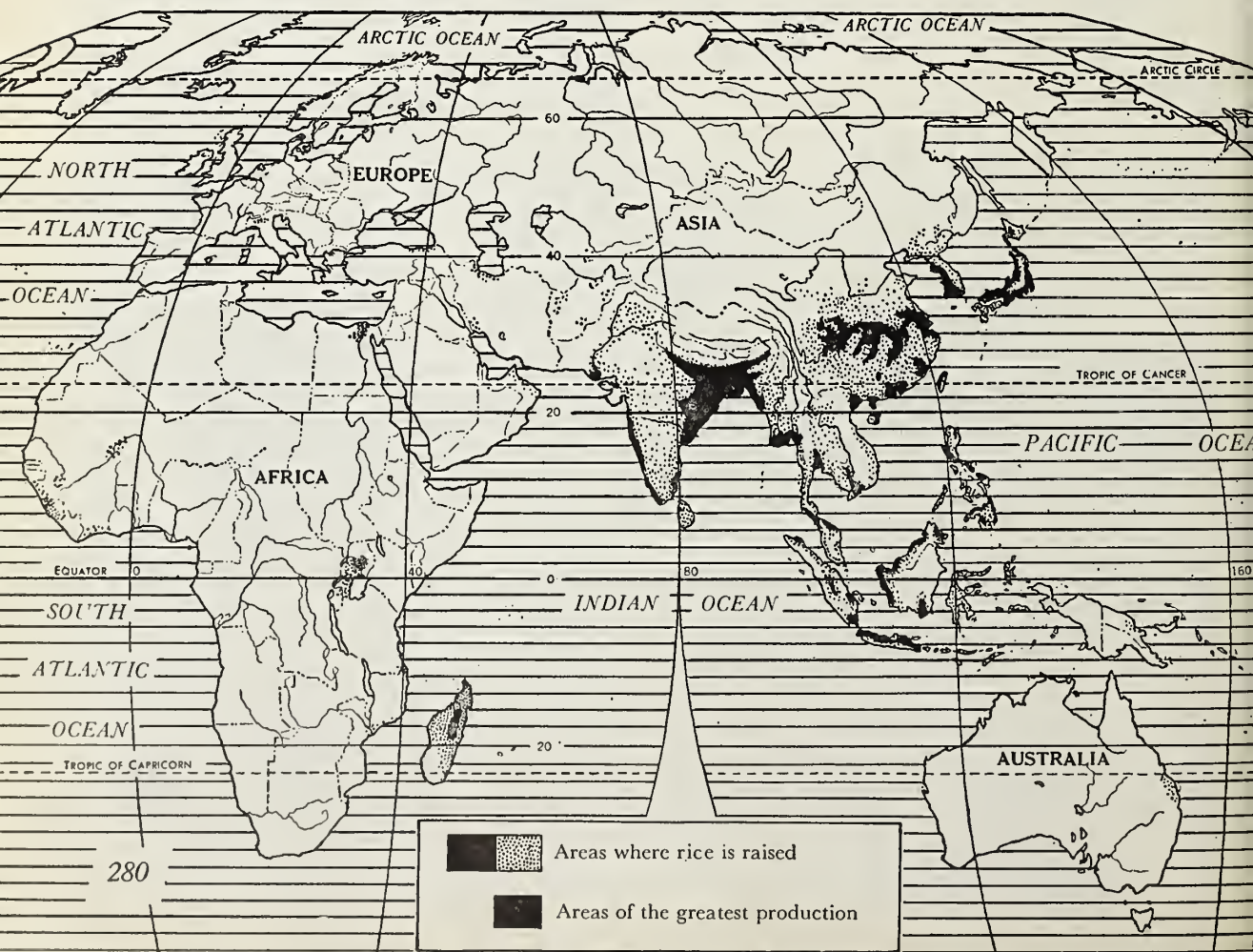
Canton is to the Si Valley what Shanghai is to the Yangtze Plain. Its trade is chiefly with the productive delta and valley of the Si River. There is some manufacturing in Canton, most of it carried on in small shops or homes. Silk cloth is the leading product. Jewellery set with jade, carved wooden orna-

ments, and articles made of bamboo, rice straw, paper, and rattan are special products of this region. Rattan is the extremely tough stem of a climbing palm. It is used for making canes, chair bottoms, ropes, and rakes. Large ships that cannot go up the Si River stop at the port on the island of Hong Kong.

## The Highlands of South China

Turn to the physical-political map and find a region of highlands between the plains of the Yangtze and the lowlands of the Si River. This hilly region extends from the coast westward to the higher lands of the Plateau of Yünnan. Although it is known as the South China Mountains, it is not really a mountainous region. Most of the land is less than 2000 feet above sea level, and the highest areas are only a little more than

A map showing where rice is grown in lands overseas.



5000 feet. Nearly all the land is sloping, and some of the slopes are quite steep. There are small areas of low, level land in the river valleys, as you can see on the map on page 283.

### Thousands of acres of tea.

Tea is an important crop of the southeastern highlands. On wet lowlands rice does best because it can grow in water. Tea grows well on wet hillsides with good drainage. China produces more tea than any other country in the world, and most of it grows on the warm hillsides of southeastern China.

The port of Foochow is the sea gateway to the tea region. It is at the mouth of a small river which leads into the hilly tea lands. For centuries it has been famous for the good tea it exports.

**Fishermen and sea traders.** The coast of southeastern China between the Yangtze Delta and the Si Valley has many good harbors. Here the wooded mountain slopes come down to the sea. In these crowded coastal lands many people have become fishermen and sailors. The thick forests that grow on the mountain slopes supply timber for making fishing junks and sampans.

**Southwestern highlands.** We have seen that the hilly land south of the Yangtze Plain gradually slopes upward toward the west and finally rises into the highlands called the Plateau of Yünnan. The highlands of southwestern China are much higher and rougher than the southeastern highlands. Most of the mountain ranges run north and south. The map on pages 18-19 shows that the population is less dense than it is in the highlands farther east. The better farm lands, however, are much used



A map showing where tea is grown in eastern Asia.

and are crowded, just as they are everywhere in China. The bottom of an ancient lake in the central part of the plateau is the most important rice-growing area in the region.

The two great needs of the southwestern highland are better transportation and more cash crops. The farmers need money with which to buy certain foods. The region is suited for producing fruit, tung oil, sugar cane, and cotton. These might be raised and exported if transportation were good enough to move them. Transportation is now mostly by small boats on rivers and canals. There are many mineral resources which can be developed. The Plateau of Yünnan has coal, iron, copper, antimony, tin, mercury, and gold. This region is touched by the Burma Road, which you will read about in another part of this book.

The boats on this narrow canal are sampans, the only kind of transportation available for carrying goods to the markets.

*CNS from Paul Guilleumette, Inc.*





# LIVING IN NORTH CHINA

North China is the large area through which the Hwang River flows. You can see on the map on page 283 that the region consists of two kinds of land, high land to the west and low land to the east. The stretch of low land is known as the Yellow Plain.

## The Yellow Plain

On the map, look at the great low plain in North China. It stretches southward from the city of Peking to the Yangtze River. It lies chiefly in the valley of the Hwang. Most of it has been built up by the river itself. The Hwang is called the Yellow River because it carries large quantities of yellow silt from the highlands to the west. In times of severe floods, it spreads out over the lowlands and deposits rich yellow soil. For this reason, the fertile plain in North China is called the Yellow Plain.

**Wheat instead of rice.** On the map on page 76 you can see that wheat is a very important crop in North China. In most parts of North China, the growing season is too short for rice and the rainfall is too light. The rice crop cannot be irrigated successfully, for the deep, loose soil allows the water to seep down too rapidly. Winter wheat is the chief grain crop. Wheat does not need a great deal of moisture, as rice does.

The same fields that are used for growing winter wheat are used for summer crops. The chief summer crop in the driest areas is millet. It is a grain crop that grows well in lands with hot summers. It does not make very good food for people, however, and the farmers on the Yellow Plain would not grow it if the summers were wet enough for rice. Other summer crops are soybeans, corn, and kaoliang, a kind of tall, coarse millet. Sweet potatoes are often planted between the rows of millet and kaoliang. After the winter wheat is cut, corn and soybeans are usually

planted on the same ground. Cotton is also grown on the Yellow Plain. You can see that the farmers in this part of North China grow a variety of crops. The map on page 208 shows how far the cotton area extends.

**Villages of mud houses.** If you were to travel through the Yellow Plain, you would see many villages. Between the villages every bit of land is cultivated. In the villages the houses stand close together. Most of them are built of mud bricks, and some of these are made stronger with stalks of kaoliang. Very little wood is now available in northern China, and stone is scarce on the Yellow Plain. The villages have the same yellow color as the plain, because the houses are all made of the soil of the plain. Often the bricks are dried in the sun because there is not enough fuel to bake them. The bricks are soft and sometimes, when it rains hard, the walls of the houses crumble away. But they can be easily repaired.

**Floods and famine.** Many streams have helped to build up the Yellow Plain. By far the largest of these is the Hwang. This river carries so much soil that large quantities settle in the channel and clog up the stream. Across the plain, earthen dikes were built higher and higher to prevent the river from flooding the land. But in times of flood the river overflows or breaks through the dikes and covers large areas of land. In some of the floods hundreds of villages have been destroyed and thousands of people have been drowned. Floods may spoil crops and cause famines. Sometimes silt washed down from the highlands clogs up the river so that it can no longer flow in its channel and must find a new one. In this way two large beds have been made by the Hwang. During the war with Japan, it was directed into its old bed, leading southward, to be turned northward again following the war. The Hwang

has caused so much damage and suffering that it is often called "China's Sorrow."

Famine may result from too little rain as well as from floods. The farmers depend on the summer rains for most of their crops. When the rains fail or come too late, thousands of people die of starvation.

You may wonder why the people do not store up enough food in good years to use in time of flood or drought. The population map on pages 18-19 will help you see why they cannot do this. The region is so thickly settled that the farmers eat about all they can raise, even in the best years. There is scarcely anything left to store up or to sell. They have little money with which to buy food. Sometimes food is brought in from foreign countries, but it is almost impossible for the people to get it because of the poor transportation. The roads of China are poor, and wheelbarrows and carts are the chief means of carrying goods to country people.

**Peking, northern capital.** Turn to the map and find the city of Peking. It is near the northern end of the Yellow Plain, at the edge of a densely populated farm land. Peking merchants do not do much trading with the farmers. Like many other parts of China, the surrounding country is poor because it is densely populated. Why, then, did Peking grow to be a large city?

The city stands at a place where important routes meet. One very old road used for trade and travel runs from Peking westward into Mongolia. This was once a caravan route and over it camels brought wool, hides, and salt from Mongolia. The physical-political map shows that the route leads to Kalgan, near the Great Wall, and on through Mongolia. Another road runs from Peking northeast to Manchuria, a third leads southward across the Yellow Plain, crossing the Yangtze, and a fourth connects Peking with Tientsin. These routes are now followed by railways, which you can trace on the map.

This location at the junction of trade routes was very important in the defence of



A map of part of China.

North China and in getting trade from distant regions, but it does not completely explain the size of Peking. The city grew great largely because for three centuries before 1928 it was the capital of China. It is a beautiful, big city with many fine temples and government buildings. It is enclosed by high, thick walls with many picturesque gates and towers of Chinese architecture. In 1949, the Chinese Communists made Peking their capital. The Chinese Nationalist government set up its headquarters on the island of Formosa. Tientsin is the most important port for the region of North China.

## The Uplands of North China

We know that a broad upland lies just west of the Yellow Plain in North China. This region of hills and mountains is often called





W. C. Lowdermilk

The terraces you see here have been made by digging back into the upland slopes of North China. In the background at the right, rains have begun to cut into and wash away some of the carefully terraced land. The farmers of North China have not been as successful in protecting their soil as those of South China.

loessland, because it is covered with a very fertile soil called *loess*. This soil is a yellow dust brought to the region by the wind. In winter the winds of North China blow eastward from the deserts and dry plateaus of Mongolia and Tibet. They bring so much dust that the region is now covered with a fine soil material. In a large part of the upland the layer is more than a hundred feet thick. This fine wind-blown soil, yellow in color, supplies the silt which the Hwang River carries down to the Yellow Plain. The area of land covered by loess is clearly shown on the map on page 283.

**Life in the loess uplands.** People who live in regions with poor transportation usually make their homes of materials they can get easily. The uplands of North China have very little timber because there is not enough rain for trees. Here, as in the Yellow Plain, earth material is used for houses. The soil is not good for making bricks, but it is useful in another way. Wherever streams have cut deep valleys, or roads have been worn down with hundreds of years of use, the loess on either side stands up in very steep walls. Here the people dig cave houses in the loess. Tunnel-like caves are made with

vertical walls six or eight feet high. The ceiling is arched. Such houses usually have one room. They are fitted at the front with wooden doors and windows. These queer cave houses are cool in summer and warm in winter.

The loessland has a light rainfall, as you can see on the map on pages 12-13. There is barely enough rain for crops to grow. When there is no rain, there is not enough food, and many people starve to death. Most of the land cannot be irrigated, because the streams flow in deep valleys far below the level of the fields. The soil, however, is rich. In the few low plains that can be irrigated, farmers raise winter wheat and millet. Millet is grown as a summer crop. Farther north, where winters are severely cold, spring wheat is raised.

This part of China has rich deposits of coal and some iron. Very little use has been made of these minerals, however. Although other fuels are scarce, coal is seldom used for heating the houses or for cooking. Coal deposits are worked only along the eastern edge of the uplands, where railroads reach the mines. Coal is mined and used by the railways and factories in North China, but it cannot be sent to the people living far from



the railroads. Much of the work at the mines is done by men using hand tools and wheelbarrows. At some future time, these rich coal deposits may become the source of power for great Chinese industries, as well as for heating factories and homes.

## Manchuria, a Valuable Region

The territory called Manchuria has always been a very important area in affairs in the Far East. Located between two of the world's great countries, it has considerable political importance. Because it has a wealth of raw-material resources, it is important for the growth of industry. In the paragraphs below are some facts that show why Manchuria is considered a valuable region.

**A much-wanted land.** You can see on the map that Manchuria extends northward from the Yellow Plain of China and borders the Soviet Union. Because of its location, both Japan and the Soviet Union have long

wanted to control Manchuria. About how far is it from Japan? Japan wanted it because it was not densely populated and offered a home for Japanese settlers. It is rich in minerals and other raw materials that the Japanese needed. One of the reasons why the Soviet Union wanted Manchuria was to have a shorter route to Vladivostok, its port on the Pacific. Find the two railroad lines that lead from Chita, in the Soviet Union, to Vladivostok. About how much shorter is the Manchurian route? For many years Manchuria was a Japanese-controlled region, and it was called Manchukuo. Most of the people in Manchuria are Chinese, and it is again a part of China.

**A land of wheat and beans.** The climate in the lowlands of Manchuria is much like that of the spring-wheat region in the United States and Canada. Crops resemble those of North China, but in this less densely populated region the farms are larger, and there is usually a surplus to export. Wheat is an

Soybeans are the most profitable of Manchuria's agricultural products. Here many big, round soybean cakes are being loaded on a ship bound for another country. They will be used for fertilizer and cattle feed.

*Schalek from Three Lions*





important crop. Soybeans, however, are by far the most valuable crop, because they can be used as food for both people and animals. The soybeans also provide raw material for making products such as oil, soap, fertilizer, and paint. Large quantities of soybeans are exported from Manchuria each year. Some are shipped to other parts of China and to Japan. Some of the soybeans leave Manchuria in the form of bean cakes or of oil. After the oil is extracted from the beans, the pulp that is left is pressed into thick cakes and dried. It is used for fertilizer, and it makes good cattle feed.

**A manufacturing region.** In Manchuria conditions are favorable for manufacturing. It has rich beds of coal and iron. Find Mukden on the map. The coal deposits near that city are among the thickest and largest in the world. Fuel oil can be extracted from oily layers of rock which are found near the coal beds. There are deposits of iron ore near by. Mining has been developed on a large scale. In the surrounding region are several manufacturing districts with coke

ovens, blast furnaces, steel mills, foundries, and machine shops. Many of these industries were started by people from Japan when that country controlled the region. Dairén is the chief seaport of Manchuria. Railroads bring products to this port from the industrial districts of the north.

#### WHAT CAN YOU ADD TO YOUR OUTLINE?

Copy the outline you were directed to make on page 274. This time leave space for examples under each heading. The headings that are printed as part of a paragraph are called "sideheads." "Intensive farming" is a sidehead. Under each sidehead in your outline, copy one or more sentences that fit it. Take the sentences from what you have read in the sections on South China and North China. After each example, write in parentheses the name of the region to which it refers, like this:

##### Intensive farming

"In no other part of China is a larger part of the land in cultivation. In no other part of the world is it farmed with greater care." (The Yangtze Plain)

## LANDS UNDER CHINESE INFLUENCE

In the first part of this discussion, we have studied that part of China which we usually think of when we speak of China. This is the eastern part of that large country. There is, however, a part of China that is not so well known. It lies to the west and northwest of the parts of China we have just studied. It is a very large, undeveloped area, but it is now rapidly becoming an important part of the country.

### Outer China

China includes, not only the densely populated eastern portion, but three provinces which taken together are known as Outer China. These provinces are Tibet, Sinkiang, and Inner Mongolia.

**Tibet, the roof of the world.** Tibet is a great high plateau deep in the heart of Asia. It is sometimes called the "forbidden land" because it is so difficult to reach. High mountain barriers, very difficult to cross, enclose it on every side. Nearly all the land is more than 10,000 feet above sea level, as you can see on the physical-political map. The climate is cold because the land is so high. The surrounding mountains get most of the rainfall. On this cold, dry, treeless, wind-swept plateau, it is hard to make a living. As a result, the population of Tibet is very sparse, as you can see on the map on pages 18-19.

The best parts of Tibet are in the sheltered valleys along the northern slopes of the Himalaya Mountains. In these valleys the land is



*J. L. Noel from Ewing Galloway*

This old native village is about 15,000 feet above sea level on the Plateau of Tibet. The small stream at the right in the background is flowing toward you from a glacier in the upper Himalaya Mountains.

irrigated by streams flowing from the mountains, and small crops of barley, wheat, and vegetables are grown. On the plateau the land is too dry for farming. Water is not available there for irrigation, for the streams flow in deep canyons. Turn to the physical-political map and find the many streams that flow from Tibet.

Nomadic herdsmen of the plateau tend sheep, goats, and yaks. Tibet is the natural home of the yak. This sturdy animal has been tamed and is very useful to the people of Tibet. It resembles an ox, and is used as a beast of burden on very difficult trails over rocks and up steep slopes. Its long hair helps to keep it warm during the severe winters. The long hair of the yak is woven into cloth and used for making clothing and tents. The yak also supplies meat, butter, and milk.

The people of Tibet have always been unfriendly to outsiders. Protected by mountains, they have lived alone for so long that they do not welcome foreigners even today. The mountain walls that rim the country are lowest on the east. This is one reason why there have always been closer relations be-

tween Tibet and China than between Tibet and its other neighbors. What other countries border Tibet? Maps show it as a part of China.

**Sinkiang, another outer region.** Sinkiang is in the centre of the world's largest land mass. And, like Tibet, it is almost surrounded by mountains. Even though it is farther north than Tibet, it is not so cold because it is not so high. What does the physical-political map show you about the altitude of Sinkiang? What does the map on pages 12-13 show about its rainfall? What relation do you see between the surrounding mountains and the light rainfall of Sinkiang? Is the population sparse or dense?

Many of Asia's land routes lead through Sinkiang because of its location. There are no railroads, but the old caravan trails have been made into roads. These caravan routes are indicated on the physical-political map by lines of red dots. During the summer, melting snow on mountains supplies water for irrigation in several valleys near the foothills. In these scattered oases, fruits, barley, cotton, and tobacco are raised. In places



where there is grass, herds of sheep are raised by nomadic tribes. Most of the land is a barren desert. Sinkiang has valuable mineral resources, such as iron, coal, petroleum, and copper. The people take most of their products by camel caravans to the one railroad which runs into Mongolia from Peking. From some parts of the country, caravans with their camels make the entire trip to Peking. They bring back tea, cotton, cloth, and sugar. In recent years Sinkiang has been greatly influenced by the Soviet Union.

**Independence of Mongolia.** Turn to the map and notice that the country of Mongolia is located between the Soviet Union and China. It is influenced by both of these countries. For a long time both Inner Mongolia and Mongolia were a part of China, and the Chinese controlled the government. More recently, however, Mongolia has had closer relations with the Soviet Union. In which direction is Mongolia from Inner Mongolia? Find the routes which connect parts of Mongolia with North China.

**The Great Wall.** Many centuries ago the Chinese and the people living in Mongolia were enemies. The Mongolians, then as now, were mainly nomadic herdsmen. In some years the grass in Mongolia was even scarcer than usual, and the Mongolians looked with longing eyes on the farming

lands of China to the south. To keep these people out, the Chinese, hundreds of years ago, built the Great Wall. This wall really separated these nomads from the settled farmers. It was built uphill and downhill for a distance of 1500 miles. Parts of the wall are still in good condition, and in some places the top is used as a road for camels and for men pulling jinrickshas.

**Mongolia, a land of nomads.** You have read that the port of Tientsin exports hides and wool that come out of Mongolia. Here the nomadic people keep sheep, cattle, and camels. In most parts of the country rainfall is less than 5 inches. On the physical-political map locate the Gobi, a great desert which is a part of this dry region. As you know, the loess of North China comes from these dry lands. A little rain falls on the highest mountains, and here a few trees grow, but nearly all the rest of the country is covered with grass. In some places even the grass is scanty. Life among the Mongolian nomads is similar to that in many other parts of Asia.

## Korea, a Land of Strife

The country of Korea occupies a peninsula that extends southward from the Chinese mainland. Find it on the map on pages 270-271. Between what two bodies of water does it lie? Korea is a country with a very

The small settlement you see in this picture lies in the vast, flat desert lands of Mongolia. Beyond the wall you can see some of the barren land of this dry country. Trees cannot grow here.

Piz Publishing, Inc.





*U. S. Signal Corps Photo*

This picture was taken from an airplane over one of the principal harbors of Korea. The mountains seem to force the houses and other buildings to crowd together along the flat, narrow shoreland.

troubled history. Many times other nations have tried to control it. In 1910 Japan took possession of it. At the close of World War II, Korea was freed from Japanese control. A few years later, however, she was the scene of another terrible war.

**Farming in Korea.** Look at the physical-political map and notice the surface of Korea. It is chiefly a region of mountains with no large plains. The small plains are crowded with farmers, who find it hard to make a living. The climate is much the same as that of North China. The heaviest rains come in spring and summer and furnish water for rice fields. Almost a third of the

farm land is used for growing rice. Other crops are barley, tobacco, and cotton.

**Raw materials for factories.** Nearly two-thirds of Korea is covered with forests. The best timber, which is along the Manchurian border, consists chiefly of pine, fir, and spruce trees. Forests farther south are used mainly to supply firewood. The country has a great variety of minerals, and valuable coal, iron, gold, copper, tungsten, and silver mines have been developed. Thus Korea has many raw materials needed for manufacturing. Mines and factories have increased in number. Transportation has been improved, and hydroelectric power developed.

## JAPAN—AN ISLAND NATION

Look again at the four large islands of Japan on the physical-political map. These four islands and the people that live on them are very important in the affairs of the world. Because of their location, they are important to us and to all nations that have interests in the Pacific Ocean area.

The largest of the four islands is Honshu. It is also the most important. Honshu is separated from Kyushu and Shikoku by the Inland Sea. In what direction is Kyushu from the Inland Sea? The Japanese islands are closely linked by steamship lines, railroads, telephones, and radio, which are all





*Fritz Henle*



*J. Diefenderfer, Jr.*

Here are winter and summer—cold and warm—in Japan. The winter snows supply the mountain streams that give Japan hydroelectric power.

modern. The port facilities of the islands are also modern, and very busy.

The four islands together are only about one-third as large as Ontario, but eighteen times as many people live on them as live in Ontario. The total population of Japan is about six times as large as the population of Canada.

On the map on pages 270-271, find the latitude of the Japanese islands. If they were placed along the Atlantic seaboard of North America in this latitude, they would reach from Florida to Nova Scotia.

Because of its great length from north to south, Japan has a variety of climates. The climate of Kyushu is like that in the southeastern United States. That of Hokkaido is like the climate of Nova Scotia. The islands of Japan also differ a great deal in density of population. Perhaps because of their milder climate, the southern islands are much more densely populated than the island of Hokkaido.

## Japan's Dependence upon Other Countries

Japan once was a leading power in the Pacific Ocean. It had an important place in the affairs of the Far East, of which it is a part, and among all the nations of the world. To take its place as a modern industrial power, Japan had to borrow many ideas and buy much equipment and materials from many nations in different parts of the world. Therefore, Japan, while it remained part of the Far East, built up relations with a number of the leading nations through trade and through other kinds of communication.

It was necessary for Japan to borrow ideas and buy things from other nations because its natural environment is not suitable for large industrial production or for agriculture. The Japanese islands are too small to support the great numbers of people that live on them. Much of the land is mountainous and hilly and not suitable for grow-

ing crops. Natural resources are not plentiful enough to supply the industrial needs of the Japanese. Some of the things Japan has done to make up for the disadvantages of its natural environment are discussed in the pages that follow.

**Japan before World War II.** To understand Japan in our world today, we must know something about its past. For that country, World War II was a great tragedy. Before the beginning of that war, Japan had a place among the leading nations of the world in industry and trade. It led all other Asiatic nations in manufacturing. It had big factories making textiles, iron, steel, machinery, and chemicals. It ranked fourth among the nations of the world in the total value of its foreign trade. The value of its exports was less than that of only two other nations—the United States and the United Kingdom. It also provided valuable markets for products of Canada and the United States.

In addition to its high rank in industry and trade, Japan had colonial possessions. The Japanese government had acquired colonies among the islands of the Pacific and on the mainland of Asia itself. Among the colonial possessions was Karafuto, the southern half of Sakhalin Island. Japan also controlled Formosa, a large island off the coast of central China, and Korea. Locate these lands on the map. Japan got raw materials from these colonies and was able to secure the trade of China and other Asiatic lands. In addition to its colonial possessions, Japan had brought the large and rich region of Manchuria under its influence, and was able to buy and sell many products there.

**Japan after World War II.** Following World War II, Japan lost all its colonies. It lost its influence in Manchuria. The regions lost by Japan had supplied a large part of the coal and iron ore, as well as a variety of raw materials used in the factories. Karafuto was returned to the Soviet Union. This was

a great loss to Japanese fisheries. Formosa, with its large plantations of sugar, rice, and tropical fruits, was returned to China. Korea was made an independent country. These losses have greatly weakened Japan. It will be difficult for the country to regain its former place in industry and trade.

## Farming and Fishing

Japan is a land of mountains. On the physical-political map you can see that the mountains almost cover the islands. The largest and highest mountain mass is near Tokyo. Mount Fuji, or Fujiyama, is in this group. Fujiyama is a great volcanic cone, so high that its summit is covered with snow except in midsummer. It is sacred to the Japanese, and in many Japanese pictures Fujiyama is shown in the background.

High mountain sides in Japan are green with forests. Small areas of land level enough for rice farming are scattered here and there. Some of the farms are in deep, narrow valleys among the hills. Some are on small plains that border the sea. Wherever it is possible to farm the land, tiny fields are crowded so close together that little room is left for roads and villages. The rural scenes in the southern part of Japan are varied and beautiful. Narrow valleys with swift streams are bordered by slopes covered with pine trees and bamboo. Where the valleys are wider, there are rice fields on terraces extending up the hillsides. In other valleys people carefully cultivate small vegetable gardens and more tiny rice fields. Some of the slopes are covered with tea bushes and mulberry trees.

**Intensive agriculture.** Everywhere in Japan there are people working on farms, for more than half the people are farmers. The farms are small, most of them containing less than three acres. Only about one-sixth of this small country can be cultivated, because so much of it is covered with rugged mountains. The good parts of the country





*Burton Holmes from Ewing Galloway*

**Japanese farmers often grow two crops in the same field. Here you see a full-grown crop of millet and a crop of rice.**

are so crowded that more than a thousand people live on a square mile of land. These regions are as densely populated as the Nile Valley in Africa or the Yangtze Plain in China. Japan's biggest problem has been to make its small amount of farm land produce enough food for the large population.

**Two small fertile plains.** The centre of Japan is Honshu, and the centre of Honshu is the plain on which Tokyo is located. Find this plain on the map. Notice that it faces the Pacific Ocean and is bordered on the north, west, and south by mountains. The plain has been built up by rivers that carry rich volcanic soil down from the mountains of central Honshu. It has a monsoon climate, like most of the coastal lands of China. In summer, southeast winds blow from the ocean and bring plenty of clouds and rain. In winter, the mountains protect the plains from the cold northwest winds that blow out from the interior of Asia. A long frost-free season makes it possible to grow two crops each year on the same piece of land. The second-largest stretch of level land in Japan lies around the city of Nagoya. Turn to the map and find this city and the

plain around it. It is smaller than the Tokyo plain, and yet it supports millions of people. Here, as well as in central Japan, rice is the leading crop.

**Rice growing.** The Japanese do intensive farming. The most common food of the Japanese people is rice. Turn to the map on page 280 to see where rice is grown in Japan. It is grown on nearly every farm of the three southern islands and is by far the most important crop in all Japan. The Japanese use the land for rice because they can get more food from an acre of rice than they can from any other crop.

The rice crop averages more than 40 bushels of grain per acre, and on some fields a second crop can be grown each year. Nearly all of Japan has a monsoon climate. In summer the winds blowing from the ocean bring an abundance of rain. The hot, wet summers are well suited to rice.

Rice is first started in seedbeds. When the plants are several inches high, they are transplanted by hand in muddy fields often called paddy fields or paddies. Many of the rice paddies are no larger than your schoolroom. Rice is grown in water, and while it is growing the fields are kept flooded with water. When the grain is ripe, the water is drained off and the rice is harvested. It is usually cut by hand with sickles. When dry, it is threshed by hand. The tightly fitted husk of the rice is removed when it is prepared for cooking.

**Using the hillsides.** Much of the land of Japan is not suitable for growing rice. Rice needs level land, for the fields must be flooded. How to use the rough, hilly lands is a problem for the Japanese. Some of the hilly land is terraced for growing rice, but most of it is used for wheat, barley, millet, and sweet potatoes. Wheat and barley are

grown also on some of the rice lands. The wheat and barley are planted in the fall, after the rice has been harvested, and they are harvested before a new crop of rice is planted in the spring.

Hillsides are used for growing tea. The best lands for tea are on the slopes in the highlands of central Honshu, just west of Yokohama. Here the slopes are drenched with rain, but the water flows off rapidly. Tea, as you already know, grows best on well-drained ground.

Tea growing requires a lot of work, for only the young, tender leaves are picked from the tea bushes. Two, three, or even four pickings of the leaves may be made during the summer. After they have been picked, the leaves must first be steamed, then dried over a fire, and finally rolled before they are ready for use. This work is done in farmhouses or in small factories near the fields. The Japanese are fond of tea and each year use nearly two-thirds of all the tea they produce.

**A money crop.** The Japanese people were producing silk centuries before they began to trade with the rest of the world. They produced it for their own needs. Later, as Japan became a modern nation, the Japanese found that they could sell the silk to many other countries. The farmers had very little to sell and they needed a cash income with which to pay their taxes and buy the things they needed. Using scientific methods, they produced more silk than any other country in the world.

Mulberry trees may be grown in nearly all parts of Japan, but the central part is best for producing silk. In central Japan mulberry trees are grown wherever the land is not suitable for raising crops. In the north the season for gathering leaves is shorter than it is in the south.

**Farming in Hokkaido.** In what latitude is Hokkaido? The winters in this cold, snowy, northern island are severe, and the frost-free season is usually less than 150 days. As a result, hardy northern crops, such as wheat, rye, barley, and potatoes, are raised. Here the farms are larger than in any other part of Japan, averaging about ten acres each. This is because the population is much less dense than on the other islands. There is room for more people in Hokkaido, but the Japanese are not anxious to leave their warmer lands farther south and go to what they consider a cold northern country, even though they might make a much better living on this less crowded island.

**The importance of fishing.** Nearly two million Japanese people make their living by fishing. Fortunately for crowded Japan, some of the best fishing grounds in the world are found in shallow waters near by. Meat is scarce in a country so crowded that there is not enough room for both people and animals. Instead of meat, the Japanese people use large quantities of fish in their diet. Here fishing is an important business. Much of it is carried on by large companies, but there are many fishermen who carry on their work independently.

Many Japanese families live on their large fishing boats. The fishing nets are hung to dry on the masts of these boat homes.

*Ewing Galloway*





In Japan the mountain sides are covered with forests, and wood is always needed for shipbuilding. Japan has many little bays and inlets along its coast line, where fishing boats have protection from the storms of the open sea. There are hundreds of fishing villages along the shores.

Warm and cold currents off the shores of Japan make ideal environments for a variety of fish. There are more than four hundred kinds of sea food in the waters near Japan. Bonito, tuna, and herring are important fish. Seaweed is used in making a kind of jelly, isinglass, and fertilizer.

Fishing is also important in Japan because the people of that crowded country are trying to introduce a better diet. Medical science has shown that a diet of rice alone is not good for people. If it were not for abundant supplies of fish, the Japanese would need to import more food. Not only is their own market supplied, but canned fish has become an important export.

## Manufacturing and Trade

Manufacturing in Japan has always depended upon trade with other countries. Supplies of raw materials and other necessities for manufacturing are scarce, and Japan needs the assistance of other countries to support its dense population.

**Raw materials.** There are a great many different kinds of raw materials in Japan, but only small supplies of most of them. Although it has many kinds of mines, the output is not large. Japan is really poor in most mineral resources. Copper, gold, and silver are mined in sufficient quantities to supply the country's own needs. It is extremely poor in iron. There are no large deposits in any part of the country.

Although much of Japan is wooded, the forests do not supply large quantities of raw materials. Lumber and pulp are imported each year. Lumber, charcoal, pulpwood, and fuel come each year from Japanese

forests, but not enough to supply the needs of the country. A common product of the Japanese forests is bamboo. This is a kind of grass, very tall and coarse. Its hollow stem is used for making paper and even for building houses.

**Sources of power.** While Japan is poor in most mineral resources, it has moderate supplies of coal. As compared with the coal resources of Canada, the amount seems rather small. Most of the coal is of very poor quality and cannot be used for making coke, which is needed in metal industries. The coal is often difficult to mine.

Japan has very small supplies of petroleum. In one month Canada produces more petroleum than Japan produces in a year. Not only is the output small, but the total resources are small. This low production of such an important source of power as oil is a serious matter to the Japanese people. In recent years large quantities of gasoline have been made from coal. But the Japanese need to import about nine-tenths of all the oil they use.

When it comes to hydroelectric power, however, the story is different. Electric power lines serve every part of the country. Only two countries in the world, the United States and Canada, produce more hydroelectric power than does Japan. There are two reasons for this—the great extent of mountainous land and the abundance of rainfall. The short, swift mountain streams supply power for many small plants. The largest area of hydroelectric power production is in mountainous western Honshu. From there electricity is sent to manufacturing centres on the eastern coast.

**The chief manufacturing centres.** Most of the heavy manufacturing in Japan is done in a narrow belt that extends from Tokyo southwest along the shores of the Inland Sea and to the city of Nagasaki on the island of Kyushu. Within this region are found all of Japan's largest cities.

**Tokyo and Yokohama.** Find Tokyo and Yokohama on the map. They are situated on Japan's largest stretch of level land. With the growth of industry, Tokyo became almost as large as New York City.

Tokyo, the largest city of Japan, cannot be reached by large ships because it lies at the head of a shallow bay. For this reason Yokohama has become the seaport for Tokyo and one of the important seaports of Japan. Tokyo is a centre for the manufacture of machinery and electrical goods. Hydro-electric power for factories is obtained from mountain streams near by.

**Osaka and neighboring industrial centres.** Turn to the map and find the city of Osaka. There are other large cities near by, but Osaka is by far the largest. It is the leading manufacturing city of Japan and one of the great manufacturing cities of the world. Kobe, which is near Osaka, is the leading seaport of the country.

The cities in this region became important commercial and manufacturing centres because they have a number of advantages. In the first place, they stand at the eastern end of the Inland Sea. Osaka does not have a good harbor of its own, but it uses the port of Kobe. In the second place, these cities are in the centre of the most thickly settled part of Japan. This means an abundant supply of workers for the factories and a big market for finished products. The Osaka district manufactures a variety of products, but textiles and machinery hold first rank.

**Many small workshops.** Although Japan has many modern factories, enormous quantities of goods are made by people sitting on the floors of small shops and working with their hands. In fact, most of the factories are so small that they employ fewer than ten people. Many of the workers are women.

Perhaps you have seen some of the products of these little workshops that are so common in Japan—cheap wooden toys, toothbrushes, and trinkets of many kinds.



*Fritz Henle*

A street in modern Tokyo at night looks just like a night scene in any other large, modern city.

**Japan's foreign trade.** We saw on page 291 that Japan had built up a vast foreign trade before the beginning of World War II. The outcome of World War II changed all this, but the country still has natural advantages that will enable it to share in world trade. A location just across the Pacific Ocean from the Americas is a great advantage. Japan has a large supply of man power. It is near densely populated lands with little manufacturing, especially China and India. This will aid Japan in marketing a great variety of manufactured goods. Japan needs to buy food and raw materials from other nations, as well as to sell manufactured goods to other nations. Her welfare depends upon her foreign trade.



# THE GEOGRAPHY WORKSHOP

Turn to the map of the Pacific Ocean on page 33. Is any part of southeastern Asia straight west of your home? If so, choose a spot for an imaginary visit. Imagine you are going to fly to this spot by the shortest possible route. Will you fly straight west? In which direction will you start? How long would the trip be if you flew straight west? How long will it be by the direct route you plan to take? Use a globe for measuring the length of your route.

## I. THE WORLD

### IN YOUR COMMUNITY

Columbus discovered America in 1492, and it was a bitter disappointment to him. What he wanted to find was eastern Asia. He died insisting that he had found it, but in his heart he must have known better. The peoples of eastern Asia had been highly civilized for many hundreds of years. Their craftsmen were more skilful than the craftsmen of Europe. The Chinese people of that time certainly thought of themselves as far more civilized than the Europeans. What do you think? Stories about Marco Polo and other early travellers to China will help you to make up your mind. In your school library or public library you can probably find books that tell about Marco Polo's journey to China.

#### *What we get from eastern Asia*

The early travellers to eastern Asia wanted silk and spices. They wanted perfumes and jewellery and carvings made of a beautiful green stone called jade. They were mistaken about the spices. Spices they found in lands farther south than Cathay and Cipango—their names for China and Japan. The other products they did find. We still get the same products from there.

Years passed. Better ships were built. The earth was explored and mapped, so that the best sea routes to eastern Asia became known. North America was settled by Europeans during these years. Now tea had become a popular drink in both Europe and America. Ships sailed to China and came back with whole cargoes of tea. Along with the tea many ships brought silk, carvings in jade and ivory, paintings, fans, shawls, brass bowls, and delicate porcelain.

The same kinds of goods are still imported from eastern Asia. If you can find some in your community, they will make an especially interesting exhibit. Ask for ornaments, samples of silk from China and Japan, and Chinese embroidery. Be sure to look in the grocery store for tea from China and Japan. There may be other foods imported from eastern Asia, such as canned bean sprouts, bottled sauces, lichee nuts, and preserved kumquats. Lichee nuts are oval in shape and about one inch in diameter. After the nuts are dried, the firm dark fruit is quite sweet. The kumquat is a citrus fruit grown in eastern Asia and is used chiefly in making preserves. A store that sells dishes will probably have some from China. Chinaware, a name for dishes, suggests the fact that dishes have long been imported from China. One kind of decoration on dishes from Nanking was so popular that it has been copied by makers outside China. This is the willow pattern. You will surely be able to find examples in your community.

Another part of your exhibit may be made up of toys and other small, cheap articles. You have learned that many such articles are made in home workshops in China and Japan. For example, there are those tiny colored sticks that open into flowers when you drop them in water. Puzzles and games, small toys, and artificial flowers are all imported from eastern Asia.

Another part of your exhibit might show things which came at first from eastern Asia. Soybeans are now an important crop in Canada too, but the first seeds were brought from eastern Asia. If soybeans are grown near your home, bring a few for your exhibit. Crush one between two sheets of paper to show how oil can be pressed out of them. Firecrackers were invented in China. They are still used there on many holidays.

Chinese lilies and other plants came from eastern Asia. Goldfish came from there, too. Plants and goldfish might be added to your exhibit. Perhaps you had better not bring Chow and Pekinese dogs, even though their ancestors did come from China.

#### *People you would like to meet*

A number of communities have war veterans who served Korea and in other parts of eastern Asia. You may be able to find



one who can tell your class about this part of the world. When you invite him, be sure to find out just where he was. Then prepare a list of questions to ask him.

A good many people from eastern Asia have come to Canada to live. Like other people who came to Canada they like to have neighbors who speak their language and have the same customs. Most of them usually like to live close together in the same part of a city. Many large cities have a section called Chinatown. If your class can visit Chinatown in a city, you will find it very interesting. There you will see Chinese stores and restaurants. Signs on the buildings are in Chinese. There are not as many Japanese people as Chinese in Canada. However, in many communities you may find many who have come here from Japan. Some of them may be willing to tell you about their native land.

## II. WHAT YOU CAN READ FROM PICTURES

The picture on this page was taken from an airplane flying over a region in eastern Asia. The region is described in one of the

quotations given in the paragraphs below. The quotations are from pages 272, 279, and 291 of this book. By finding the quotation that fits the picture, you can find out where it was taken.

1. "As much land as possible must be cultivated. To save space, the farmers get along without fences, roads, pastures, and barnyards. Much of the lowland is irrigated."

2. "The farmers use much of their land for mulberry trees and produce a fine grade of silk. Some also cover a large part of their land with ponds in which they raise fish."

3. "Narrow valleys with swift streams are bordered by slopes covered with pine trees and bamboo. Where the valleys are wider, there are rice fields on terraces extending up the hillsides."

The picture shows fields, a large irrigation canal, smaller irrigation ditches, and a number of villages. Can you find all these things? Remember that in the densely populated regions of eastern Asia trees are allowed to grow only around the houses and along irrigation canals.

How could you prove from the picture that this is a region of intensive farming?

*CNS from Paul Guillumette, Inc.*





The pictures on pages 75, 95, 100, and 101 were taken in regions of intensive farming in Europe. The picture on page 75 shows scattered trees and hedges between the fields. How is this different from the arrangement of trees and bushes in the picture on the page preceding this?

The picture on the preceding page and the one on page 100 both show canals and ditches. Do they have the same purpose as they are shown in both pictures?

What do you see in the pictures on pages 95 and 101 that you would not be likely to see in the densely populated regions of eastern Asia?

### III. A MAP TO MAKE

The map suggested below is hard to make. Do not try it unless you enjoy making maps. You will need an outline map of Eurasia. You may trace it from the map on page 374.

1. Draw a heavy black line around the section we have been calling eastern Asia.

2. Now color light blue all of eastern Asia that has less than 20 inches of rain in a year.

3. For the next step, use the relief map, the physical-political map, and the map on page 283. On your outline map, color brown the rough mountain regions. Never mind if two colors overlap.

4. Color red the main areas of eastern Asia which have more than 250 people to the square mile. Draw a heavy red line around the area that has 125 to 250 people to the square mile.

Do you see how the map helps to answer study guide number 1 on page 268? The members of the class who have not made maps may prepare a list of questions to ask those who have made maps. For example, are there any densely populated regions with less than 20 inches of rain in a year?

### IV. WHAT WOULD YOU BUY?

Large city department stores in Canada send buyers to other countries. The buyers look for things to import for their stores.

Imagine you are a department-store buyer on your way to buy articles in eastern Asia. You wish to buy everything you think your store can sell. The articles must be things Canadians would like to have, and they must sell for reasonable prices. They must be things that are made in eastern Asia.

To which countries of eastern Asia will you go? List the things you will look for in each country.

### V. CROPS OF EASTERN ASIA

In working out the following activity, you will need to use the maps on pages 76, 141, 157, 208, and 280. Name the crop described in each paragraph.

1. A crop, not used for food, that is grown in the valleys of the Yangtze and Hwang rivers. It is grown in many parts of Africa, but not in Europe.

2. A grain that is grown throughout North China, on the highlands as well as in the valleys. It is grown in many places in Africa. There are areas of heavy production in southern Europe, but none is grown in northern Europe.

3. The most important grain of eastern Asia. It is especially important in the Yangtze Valley, in western Korea, and on the southern islands of Japan. Very little is grown in Europe.

4. A grain that is grown everywhere in Europe south of the parallel 60. It is a leading crop on the grasslands of the Soviet Union in both Europe and Asia. In eastern Asia it is important only on the Yellow Plain.

5. A crop grown along the coast of South China, in the Yangtze Valley, and on the islands of Kyushu and Formosa. It is not grown in Europe. For the people of Europe an entirely different plant supplies the same kind of food.

### VI. PICTURES TO SORT

Imagine you are looking at pictures of the scenes described below. Which of them could have been taken in eastern Asia?

1. A flock of sheep on a wide grassland.

2. A steel mill.

3. Barges on a canal.

4. A large field of sugar beets.

5. A fishing fleet.

### VII. EASTERN ASIA IN THE NEWS

The world is very much interested in eastern Asia. You will probably find it mentioned in every newspaper you read. Look especially for improvements in the use of natural environment and resources, and changes in the ways people live.



# *Living in India, Pakistan and Ceylon*

## LANDS OF MANY CONTRASTS

On the map above, the darkened area, has long been known as India. It juts out from Asia into the Indian Ocean. In some ways this area is much like an island. Where it is not bordered by water, mountains form just as effective a barrier. At its southern tip lies the island of Ceylon.

Yet, long before Europeans knew anything about America and Australia, they sought the glittering and scented riches of far-away, romantic India. Many a traveller and trader grew excited over tales of this wondrous land of spices, which was so hard to reach. Many an explorer set out to seek a better sea route to its shores. You know that Columbus was

searching for a sea route to India when he discovered America. He thought he was in India, and so he called the natives "Indians." They have been called Indians ever since. But our story is not about America. Our story is about the land that Columbus wanted to reach.

It was not until after Columbus had made his famous voyages that an explorer from Portugal, Vasco da Gama, succeeded in sailing around the southern tip of Africa and on to India. The new route was followed by ships from many countries of Europe, but the British were most successful in establishing trading posts in India.

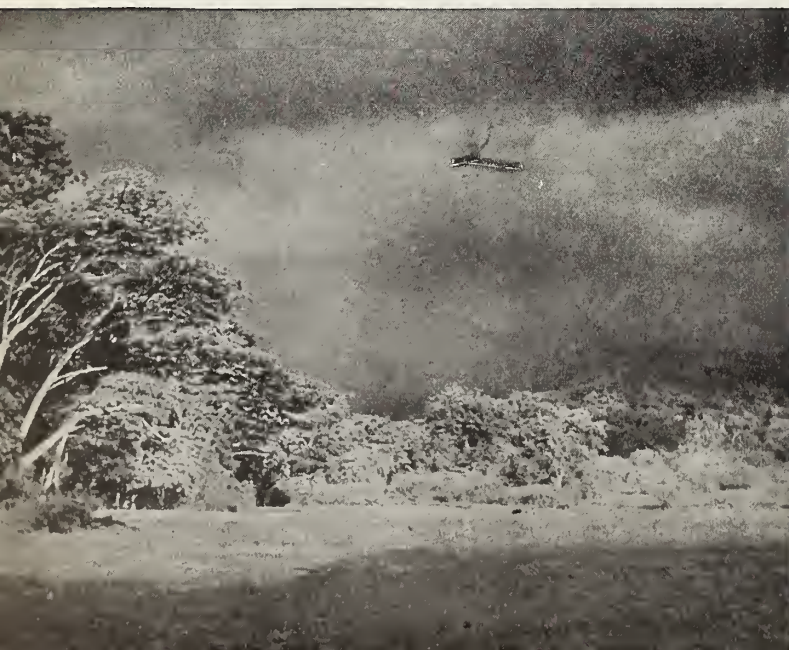


**The Indo-Pakistan Subcontinent.** Turn to the map on pages 270-271. On it locate India and Pakistan. Britain controlled these countries up until 1947, when she gave them complete independence. Today, like Canada, both countries are members of the Commonwealth of Nations. The map shows that Pakistan is divided into two parts. India occupies most of the large peninsula and extends northward between the two parts of Pakistan. About one thousand miles of Indian territory lies between Eastern Pakistan and Western Pakistan. Bits of land along the coast belong to neither India or Pakistan. They have been held by the French and Portuguese for many years. Ceylon, too, has been granted her independence by Britain and is a member of the Commonwealth of Nations.

**Millions of People.** India, Pakistan, and Ceylon are crowded countries—more crowded even than China. India has twenty-five times as many people as Canada in an area that is a little larger than Ontario and Quebec. Though Baluchistan in Western Pakistan is not densely populated, the other parts of Pakistan are. Its total area is about the same as that of British Columbia; its population is more than 75,000,000.

From June to September monsoon clouds like these are blown steadily from the Indian Ocean, bringing heavy rains.

*Courtesy Government of India Information Services*



Ceylon with an area equal to that of New Brunswick has half as many people as Canada. Four-fifths of the population of the Commonwealth are crowded into these three countries.

You have probably heard of the caste system in India. By it the lives of Hindus were rigidly regulated from the cradle to the grave. When a child was born into a Hindu family, he belonged to the caste of his father. He could not change his work or his way of living. Some unfortunate Hindus did not belong to any caste and were known as “untouchables.” They were considered unclean and had the hardest time of all.

Under the leadership of Mahatma Gandhi, who is known as the greatest Indian since Buddha, Hinduism has begun to root out the caste system and to abolish “untouchability.” Inter-caste marriages are becoming more common. Indian law provides a penalty for anyone who does not give an “untouchable” fair treatment. So far has reform gone that “untouchables” have held important cabinet posts in the government of India.

**The three seasons.** The subcontinent has three seasons. From October or November through February it is cool and dry. In the northwest the scantily clad natives shiver during the nights and mornings. To the Europeans, the lower temperatures are a pleasant relief. During this season, skies are clear, the landscape is green with winter crops, and water is plentiful.

Gradually it grows warmer. By April, the subcontinent is receiving direct rays of the burning sun. Temperatures then rise rapidly, and May is usually the hottest month. The heat becomes almost unbearable. Whirlwinds pick up dust and leaves from the baked ground, vegetation withers and dies, and ponds dry up. The entire region suffers. This is the hot dry season.

Early in June the people begin to watch for a change in the weather. Finally the direction of the winds shifts so suddenly that the monsoon is said to burst. Huge black clouds darken the sky, and soon the rains begin. In some parts the monsoon rains are only showers; in other parts the water falls in great, blinding sheets. Rains lower the temperatures slightly, but the moisture makes the heat oppressive. Clothing has to be dried over a fire, and articles that were glued together fall apart as a result of the dampness. With the rains, vegetation revives. Soon the landscape, so dreary and brown during the dry season, is a mass of green again, this time with summer crops.

Sometimes the rains come too late for good crops. Once this meant famine—misery and starvation for millions of people. Now irrigation and improved transportation lessen the dangers that result from drought.

**A land of extremes.** The highest mountain ranges in the world curve around the subcontinent's northern boundary, but along its coasts are river deltas only a few inches above sea level. In some parts there is too much water, in other parts too little. The hills of the northeast have the heaviest rainfall in the world, averaging 500 inches a year. But in the northwest is one of the driest of deserts. Tiger-infested forests contrast with wide, lifeless deserts. There are Arctic tem-

peratures in the mountains, but the heat is suffocating in the jungles.

Some parts are densely populated, other parts are almost empty. The wealthy live in luxury, while whole families spend their lives without a shelter. Automobiles edge their way through streets crowded with underfed children, wandering cows, and carts drawn by oxen. This is a land where ships can always be loaded with cargoes, and where there are always people on the verge of starvation.

**Study guides.** Perhaps you can answer some of these questions before you begin your study. Talk them over in class and add any others which you think are important.

1. What natural conditions make it possible for such a large population to live in the Indo-Pakistan Subcontinent? (IV)

2. Why is rice growing widely distributed? Where are the best rice areas? (II, IV)

3. How do conditions in the wheat areas differ from those in the rice areas? (II)

4. Why is irrigation needed in most parts of the subcontinent even where the rainfall is more than 40 inches during the year? What are the sources of water for irrigation? (IV)

5. What natural resources for manufacturing do India, Pakistan, and Ceylon have? What industries are likely to grow in importance? (I, V)

6. What goods are exported from India, Pakistan, and Ceylon? What goods are imported to these lands? (I, VI)

## WHAT WE CAN READ FROM MAPS

### LOCATING INDIA, PAKISTAN, AND CEYLON

1. On the map on pages 270-271 locate India, Pakistan, and Ceylon. You can see that high mountains on the north separate India from the rest of Asia, and bodies of water on the other three sides make this area a vast peninsula. What sea is between this

region and southwestern Asia? Find the Bay of Bengal. Print the names India, Pakistan, and Ceylon on your outline map of Asia, and color that part of the map.

2. Through what part of India and Pakistan does the Tropic of Cancer pass? About how much of India is in middle latitudes? How much is in low latitudes? About what is the latitude of the northern part of Ceylon?



3. Turn to the world map on pages 10-11 to see what part of North America is in about the same latitude as India. About how many degrees south of southern Canada is the most northern part of India? How does the climate of Canada compare with India's climate? Explain why the two climates are so different.

4. Find the longitude of Fort William on the map, pages 20-21. Turn to pages 270-271 and estimate the longitude of Calcutta, in northeastern India. How many degrees apart are these cities? When it is noon in Calcutta, what is the time in Fort William?

### LOWLANDS AND HIGHLANDS

The Indo-Pakistan Subcontinent has a variety of surface features, and their arrangement is easily seen. Notice the shape. After tracing its boundary with your finger, you could probably make a fairly good drawing of the subcontinent.

1. There are three large divisions of surface features in the subcontinent: the mountains in the north, the plateau in the south, and a wide plain between the two. Find the Himalaya Mountains along the northern boundary. In the eastern part of the Himalayas is Mount Everest, the highest mountain peak in the world. What is its altitude? The Hindu Kush Mountains in the northwest

are also very high. With the Himalayas, they form a wall which almost completely separates Pakistan and India from the rest of Asia. Locate Khyber Pass, the important gateway to southwestern Asia. Trace the western part of the mountain border into the Pakistan province of Baluchistan. You can see that the mountains and plateaus of Baluchistan are continuous with those of Afghanistan and Iran. Along the northeastern edge of India are mountains which help to separate India from Burma.

2. Most of the peninsula is a plateau. What name is given it? The western edge is so high and steep that it resembles a mountain range. Find the Western Ghats and the Eastern Ghats on the map. Which edge of the plateau is higher? Narrow coastal plains border the peninsula. On which side are they wider?

3. Between the plateau of southern India and the mountains of the north is a great plain. Through it flow three large rivers and their tributaries. Find the Indus River, in Pakistan. Where does it rise? After leaving the Himalaya Mountains, in what direction does it flow? Two of its large tributaries are shown. Where do they rise?

Farther to the east is the Ganges River. In what general direction does it flow? You can see that the Ganges divides into several

**Khyber Pass follows a series of deep gorges through the lofty barrier of the Hindu Kush Mountains. It is the most important pass that leads from Afghanistan into Pakistan. Notice the winding road at the right.**

*Deane Dickason from Ewing Galloway*



streams before entering the Bay of Bengal. Describe the long course of the Brahmaputra River. The Ganges and Brahmaputra rivers built this delta through which they flow to reach the Bay of Bengal.

### FOLLOWING THE COAST LINE

1. Begin with Baluchistan and follow the coast to the boundary of Burma. Are there many or few irregularities along this coast? In the distance of about 5000 miles of coast line, there are only a few natural harbors. Find Bombay on the map on pages 270-271. It is built at the best harbor. Find Karachi, the capital of Pakistan near the mouth of the Indus River. Madras, a good-sized port on the Bay of Bengal, has an artificial harbor. Locate Calcutta, near the mouth of the Ganges. The two gulfs on the west coast are too shallow for large ships.

2. How far is Ceylon from India? The capital and chief port of Ceylon is Colombo, which is in an excellent position for carrying on trade. Turn to the map, page 85, to see how many routes meet at Ceylon.

### CLIMATE AND VEGETATION

1. Turn to the map on pages 14-15 to find the length of the growing season in the subcontinent. It has a tropical climate. How does the latitude help to explain this? How do the Himalayas affect the climate?

2. Since you know about the arrangement of surface features, would you expect the rainfall to be evenly or unevenly distributed?

Check your answer by the map on pages 12-13. Which part of the subcontinent has very little rainfall? Which parts have very heavy rainfall? Where is the rainfall from 20 to 40 inches? Compare the rainfall of the Eastern Ghats and the Western Ghats. How does the rainfall of Baluchistan compare with that of the region north of the Bay of Bengal?

3. Most of the rainfall comes in one rainy season which lasts from three to six months. As you have seen, the amount varies from place to place. Would you expect the natural vegetation to vary a great deal from place to place? Turn to the map on pages 16-17 to see how many types of vegetation grow in the Indo-Pakistan subcontinent. What kind do you find in the regions of heaviest rainfall? Turn to the physical-political map and find the name of the desert east of the Indus.

### DISTRIBUTION OF POPULATION

Turn to the map on pages 18-19 to see how the large population of the subcontinent is distributed.

1. Which of the three divisions has the densest population, the northern highlands, the northern lowlands, or the plateau?

2. Why is the strip of dense population narrower on the west side of the peninsula than it is on the east side?

3. Compare the population of Baluchistan with that of the area of similar size on the opposite side of the subcontinent. What maps suggest reasons for this difference?

4. Why is the population sparse in the region east of the lower Indus Valley?

## FARMING IN INDIA, PAKISTAN, AND CEYLON

The Indo-Pakistan Subcontinent is an agricultural region. The densest population is found where the land is best for farming. Yet it has some large cities. You have already located some of them—Calcutta, Bombay, Karachi, and Madras. But about four-fifths of the people live in villages and cultivate the near-by fields.

Farming is very different from farming in Canada. In some districts the crops are the same as those raised in our fields, but

farm life is entirely different. Most of the work is done with primitive tools, such as the crooked-stick plow, for the farmers of the subcontinent are miserably poor. They live in crowded villages, some large, others small. Some of the larger villages are trading centres. To these villages farmers from small villages take anything they have to sell, and then they can buy a few necessities. From a distance larger villages may be recognized by the tapering spire of a temple.





*J. H. Lobnow*

The streets of a village trading centre are crowded with people carrying bundles of produce to market.

Village houses are usually built of the materials at hand. In the hot, rainy delta of the Ganges, dwellings are commonly built with bamboo frameworks and roofs of straw. Walls are made of split bamboo or of reeds and are plastered with mud. In the drier, dusty regions, huts of sun-baked mud bricks with tile roofs provide more protection from the heat. Little wood is used in any of the buildings, for it would soon be eaten up by white ants, or termites. Whenever a group of mud huts is built, the pit from which the mud is taken is used to collect rain water. Such pits are called tanks. They provide water for drinking, washing, and irrigating. In the rainier regions, villages are more likely to have wells and streams to provide water for irrigation and home use.

Around the villages are patches of cultivated ground. Beyond the patches are pastures, and beyond the pastures in some places are woodlands or wastelands. How far the natives travel beyond their pastures is determined by how much time they have. In the crop seasons they cannot go far, but after harvest they may journey to a larger village or to a famous temple.

Humped cows, oxen, and water buffaloes do the work that horses and machines do in Canada. Although the subcontinent has more cattle than any other region in the world, yet cattle raising is not a profitable industry. Little milk is produced, and dairy products such as butter and cheese are almost unheard of. Most of the cows are half-starved work animals. The Hindu religion forbids



the taking of life. As a result, many cattle die of disease and old age. Those unfit for work roam about searching for food.

Camels, sheep, and goats are found in the dry, hilly wastelands of western Pakistan. In the rainy tropical areas farther east, elephants are used. These huge beasts are trained to drag logs and pull heavy loads.

Village life in India, Pakistan, and Ceylon changes very gradually, but changes are taking place. Now and then people leave their villages to find jobs in the city. They learn new things and they see new methods. When they return to their villages, they tell their neighbors what they have experienced. Vast irrigation systems have been developed, and many miles of good roads have been built. The work goes steadily on. Slowly the farmers are being taught to think of more than their own little villages. They are learning more about their own countries, and about the world outside.

The subcontinent may be divided into three large farming regions—the northern highlands, the Indus-Ganges plain, and the Plateau of the Deccan. Let us see how the people live and work in each of these regions.

## The Northern Highlands

We have seen that the towering Himalaya Mountains extend along the northern border of India. The foothills of these mountains are covered with tropical forests, and tigers and other wild beasts haunt thick jungles of bamboo. Large tea plantations cover some of the hillsides. There are plants of temperate lands higher up on the mountain sides. Higher still, forests of cone-bearing trees cover the landscape in a never changing green. Forests soon give way to scanty vegetation with scattered trees. Beyond that is bare rock, and the mountain summits are white with snow the year round.

**The beautiful Vale of Kashmir.** Turn to the map and find the province of Kashmir, hemmed in by the Himalayas and the Hindu

Kush Mountains. In the midst of these snowy peaks lies the broad, green valley known as the Vale of Kashmir. Through this high valley flows a winding tributary of the Indus River. Surrounding it are cultivated fields, and herds of goats live on the scanty hillside pastures. But the region is noted not so much for agriculture as for its beautiful scenery and ideal climate. It is very popular with tourists. Thousands of European residents of India go to Kashmir during the summer to escape the hot weather of the lowlands. Some of them live on houseboats on the river. Others stay in hotels. Most of the travelling is done on the winding river. Crowded along its banks are mosques, palaces, and temples. Balconies overhang the water. Grass and

**Mountain scenery and a lower temperature make the Vale of Kashmir an ideal place during summer.**

*Courtesy Government of India Information Services*





poppies grow on the thatched roofs of the picturesque little cottages.

Tourists enjoy the bazaars of Kashmir, where they can buy many articles that the native people have made by hand. Beautiful embroidery work and carpets and shawls woven from the fine, soft wool of the flocks are made by the village craftsmen. Into the carpets and shawls are woven flowers and leaves and other designs, for which the head of the family plans the patterns.

**The dry highlands of Baluchistan.** Turn to the map on pages 270–271 and again find Baluchistan. As you know, the rainfall there is very light, and getting water for the fields and gardens is a difficult problem. There are no large streams here that can be used for irrigation. Rushing torrents that follow the rains are of little use for irrigation. Like the neighboring regions, Baluchistan is very sparsely settled.

Some of the people live near the mountains. In order to have water for their crops, they dig tunnels into great heaps of gravel at the foot of the mountains. When the rivers reach the base of the mountains, the water sinks into the ground. It is this water that the farmers can get for irrigation. Wheat, barley, millet, and fruits are raised where the land can be irrigated. Most of the people, however, are nomadic herders who drive their flocks of sheep and goats from place to place in search of water and pasture.

## The Indus-Ganges Plain

Turn to the map on pages 270–271 and again find the lowland in Pakistan and northern India. This is a vast plain. Its origin is similar to that of the Po Valley. For a long time this plain lay under the sea. The peninsula to the south of it was then an island. High mountains bordered the sea on the east, north, and west. Great rivers scraped soil from the mountains and carried it swiftly to the quiet waters of the sea. Centuries passed. Finally the sea was

filled with mud and sand. The land to the south was no longer an island but a peninsula. It was connected with the mountains of central Asia by these river-made plains.

The Himalayas supplied much of the material that built up the great plains. Rivers are still depositing soil on the land, making it more and more fertile and building deltas farther and farther out into the sea. The Himalayas influence the climate, too. They block the cold north winds that sweep southward from central Asia. Even the part of the subcontinent that lies in the temperate belt has a tropical climate.

The heavy rains and the deep snows on the highest slopes of the lofty mountains supply water for the great rivers. These rivers, in turn, supply the people of the plains with water for irrigating land which would otherwise lie useless. The rivers also provide a means of transportation.

**Crowded delta lands.** What two large rivers have built up the great delta along the northern shores of the Bay of Bengal? This delta is remarkably flat. Over 50,000,000 people live on these fertile lands, about four times as many as live in the whole of Canada. So crowded is the delta that in some places nearly two thousand people live on a square mile of land. In only a few other parts of Asia would you find lands as thickly populated. How can so many people make a living in this region?

For one thing, the soil is fine and fertile and deep. One cannot find even a tiny stone in the whole delta. From time to time, as the streams overflow, a rich layer of mud is deposited on the fields. The long growing season and the abundance of moisture make it possible to grow crops the year round. The countryside is always green. Although the population is very dense in some parts of the delta, in other parts there are swamps and jungles where no one can live.

The farmers on the delta live in little villages or in separate houses built on higher ground. Sometimes dirt is piled into mounds

to make the land still higher, so that the house will stand well above the floods that come with the summer monsoon. There are almost no roads or railroads in the delta. The ground is swampy there, and many bridges would be needed to cross the numerous streams. Farmers use boats instead of carts. In times of flood, only the higher ground and the mounds upon which the houses are built stand above the water.

**Rice, the great food crop.** In the delta and the lower Ganges Valley, rice is by far the most important crop. Enormous quantities are raised, as you can see on the map on page 280. It is grown almost everywhere and covers four-fifths of the cultivated land. But there is little to sell. Here, as in many other densely populated areas in Asia, the people live chiefly on a rice diet.

As in China and Japan, the rice is sown in beds of fertile soil when the summer monsoon begins. In July or August, when the plants are about ten inches high, they are transplanted by hand in fields that are muddy after the heavy monsoon rains. Then the fields are flooded and remain covered with water until harvest time.

**Jute, a cash crop.** The subcontinent raises more than nine-tenths of the world's supply of jute. It is the chief crop in the eastern part of the delta. Much of it is made into burlap, a coarse, cheap cloth often used for making gunny sacks. Coffee, sugar, and grain are usually marketed in gunny sacks, while bales of cotton and wool are wrapped in burlap. Jute is also woven into cloth for clothing and is used in the manufacture of twine, carpets, rugs, and linoleum. It is a swamp-loving plant, but it will thrive only in rich soils in a tropical climate. The slender stalks grow from five to twelve feet high.



*Courtesy Government of India Information Services*

Natives are cutting tall stalks of jute. Jute grows well on the delta lands of the Ganges where it is hot and there is much moisture.

When the plants are mature, they are cut off near the ground. The stalks are soaked in water until the outer layers become soft and can be removed. Sometimes this takes only a few days and sometimes a month. The fibre is dried in the sun. Then it is baled and sent to Calcutta for export or to be made into cloth.

**Tea to sell.** Much tea is produced for export by India, Pakistan, and Ceylon. Turn to the map on page 281 to see where it is grown. North of the delta lands are great tea plantations, owned and managed by large companies. Most of them are on the low slopes bordering the Brahmaputra River. Where the land is low, ditches are dug to provide the necessary drainage. High temperatures and abundant rainfall make it possible to get large crops of tea leaves during the wet season. Plantations average sixteen hundred acres in size and require many workers and expert managers. Scientific methods are used. Each year India, Pakistan, and Ceylon export large quantities of





Henry Tulton

Tea pickers bringing their baskets of tea leaves to be weighed.

tea, chiefly to Europe. The home market for tea is also important, for all over the subcontinent tea is the most common drink. Compare conditions in India, Pakistan, and Ceylon with those of the tea regions in China.

**The upper Ganges Valley.** The central and upper parts of the Ganges Valley west of the delta slope gently to the southeast. The rainfall gradually decreases westward. In the eastern part of the valley, wherever

there is sufficient moisture, rice is the most important crop, just as it is in the delta. In the western part, where there is less rainfall, wheat, barley, millet, and sugar cane are grown as well as rice. Rice is the most important summer crop, because it needs much heat and moisture. Wheat, barley, and millet are common winter crops, planted at the close of the rainy season and harvested before hot summer weather comes. Yields are not high, but in this way the farmers of the Ganges Valley get two harvests from one piece of land.

**Sugar production.** India is one of the leading producers of sugar cane. Most of it is grown on small plots in the Ganges Valley. Turn to the map on page 141 to see in what other regions it is produced. Sugar cane grows throughout the year. Rains supply the necessary moisture during the wet season, and during the dry season the land is irrigated by water from wells or tanks. Farms near the Ganges may be irrigated by water brought by canals from the river.

Almost every village has its small sugar mill. Sugar from these mills is not refined. Instead, the stalks are crushed to squeeze out the juice, which is then boiled down to make a soft brown sugar called "gur." This is the kind of sugar that most of the people use. In spite of the heavy production of sugar cane, India and Pakistan usually have to import sugar. In fact, most of the sugar is used in the regions in which it is produced.

The ox provides the power that turns this small sugar-cane mill.

*Courtesy Government of India Information Services*



**The Indus Valley—a great oasis.** Turn to the map and find the plains that lie between the upper Ganges River and upper



Indus River. This region is the Punjab, a word which means "land of the five rivers." You can see the Indus and two tributaries on the map on pages 270-271. The other large tributaries are not shown on the map.

The Punjab is an excellent farming region. It receives a moderate amount of rainfall in the summer months, but agriculture depends chiefly upon hundreds of canals from modern irrigation works which have been built on the Indus and its tributaries. These canals distribute water from the rivers over about half the area and make it possible to grow crops the year round. During the rainy summer season, the lands of the Punjab are used chiefly for growing millet, corn, and cotton. During the drier winter season, most of the land is used for growing wheat and barley. Wheat yields are low in the Punjab, only about twelve bushels per acre. Some years there is a surplus, and wheat may be then exported from Karachi. On the map on pages 270-271, find the railroad that leads to Karachi.

Turn to the map again and find the lowland along the lower Indus Valley. A part of this plain is occupied by the Thar Desert, a desolate area of rolling sand hills and sun-baked brush. The rainfall of the lower

Indus Valley is even lighter than that of the Punjab. The land cannot be used for growing crops unless it is irrigated. A big dam has been built across the Indus about three hundred miles from its mouth. Canals carry water to the desert from huge reservoirs, making it possible to grow food for many people on lands that would otherwise be useless. You may think of the Indus Valley as being similar to Egypt. It is an irrigated tropical desert.

## The Plateau of the Deccan

Much of the Plateau of the Deccan is rough and hilly. Some parts are thickly forested. Other parts have vast fields of waving jungle grasses. The western part of the Deccan has rich volcanic soil, but rain falls only during a short season. When the monsoon winds blow from the Arabian Sea, they rise to cross the Western Ghats. These winds bring drenching rains to the western side of the mountains, but they carry only small supplies of moisture eastward across the plateau. Because the surface is so irregular, little irrigation is carried on. Most of the scanty water supply collected in ponds and tanks is used in growing food crops.

**This farmer in the Punjab is cultivating his small field with a wooden plow and a team of oxen.**

*Philip Gendreau*





**Farming in the Deccan.** During most years there is enough rain for low yields of grain crops, but rice is raised wherever there is water for irrigation. Turn to the maps on pages 76, 80, 141, and 157 to see just where each of the crops shown on these maps is raised.

The Indo-Pakistan Subcontinent grows fifteen per cent of the world's cotton. The area of heaviest production is the Deccan, where cotton is grown on farms of about ten acres each. Most farms are not irrigated, but here and there some water is supplied by wells or tanks. The farmer works hard but, with his simple tools, he gets only about half as much from each acre as does a grower of the United States. Nor does he get as good a price, for the fibre of Deccan cotton is short and coarse. American varieties have been tried, but as a rule they do not yield so well as Indo-Pakistan cotton.

**The coastal lowlands.** The narrow coastal plain along the western side of the peninsula has very heavy rains in summer. Coconut

palms lean toward the sea all along the coast, and they are also grown on plantations. Many other tropical plants—pepper, banana, and mango—grow in great abundance on the warm, wet lowlands. On the slopes are rubber, tea, and coffee plantations.

The plain along the eastern coast of the peninsula is wider than that along the western coast. The region is tropical, but it has a rather light rainfall, as the map on pages 12-13 shows. Millet, rather than rice, is the leading crop. Rice, however, is grown on the delta lands wherever water is available.

## The Island of Ceylon

Ceylon is a region of highlands surrounded by coastal plains. You can see on the map that it is separated from India only by a narrow strait. This waterway is less than twenty-five miles wide, but it is so full of sand bars that it is difficult to cross. Because of Ceylon's latitude and because it is surrounded by water, the range in temperature

Small native boats are drawn up on the beach in Ceylon. The luxuriant growth of coconut palms, extending inland from the beach, is a common sight along rainy tropical coasts like this one.

*Fritz Henle*



is small. Both summer and winter winds bring rain, and the rainfall is heavy because of the highlands on the island. Although much of the island is cultivated, thick tropical jungles may still be seen in some out-of-the-way places.

Much of the land in Ceylon is laid out in large plantations, owned and operated by the British. Rice is grown on the low, wet plains, but not enough is produced for the people's needs, so some rice is imported. On the sand dunes along the coast are groves of coconut palms. On the lower slopes of the

highlands are rubber plantations. The wet hillsides are covered with tea plantations. Plantation products are exported to many lands from the port of Colombo.

### COMMERCIAL CROPS

Look through the section on farming and make two lists of commercial crops. They are the crops grown for sale. In one list put crops that are industrial raw materials. In the other put crops that are grown for export. Some products will go in both lists. Keep your lists to consult as you read the next section, on manufacturing and trade.

## MANUFACTURING AND TRADE

Long before the coming of Europeans, native craftsmen made pottery, farm tools, cotton cloth, vegetable oils, and many other such things. Even today, most of the subcontinent's manufactured goods are made by primitive methods. The people are only beginning to learn to use machines.

Because costs of transportation were high, village craftsmen made only as many articles as the villagers could use. Internal communications were poor. *Coastwise* trade, or trade carried on by ships with other parts of the same country, developed before overland trade, even though the subcontinent has few natural harbors. Transportation systems are gradually being improved. Good transportation encourages trade, unity, and understanding between the peoples of different regions.

### Industry in Homes and Factories

Manufactured goods are bought in great quantities from foreign countries and are paid for with exports of raw materials.

But in the large cities there are factories turning out the kinds of things that are needed by the people. The factories make very few machines and other heavy manufactures. Their raw materials are mostly products of the farms. Yet the subcontinent ranks high among the industrial regions of

**After the hides have been tanned, machines in the factories roll out a good quality of leather for many products.**

*Courtesy Government of India Information Services*







*Courtesy Government of India Information Services*

Although this skilled ivory carver works alone in his small village, he makes many beautiful things that can be sold in foreign markets.

the world because of the great quantity of articles made throughout the region. This is a land of villages, and every village has its craftsmen. When all the things made in villages and cities are added up, the total is surprisingly high.

**Village handicrafts.** Each village, no matter how small, has its weavers, metalworkers, wood and ivory carvers, and potters. These craftsmen provide many of the ordinary things needed by the people in their simple ways of living. Beautiful and artistic goods are made to sell outside the villages. Often village women seem weighed down with jewellery, but they do not wear these things simply to adorn themselves. Jewellery takes the place of a bank. When a man has saved a little money, he buys silver and turns it over to the silversmith. After the smith has finished his work, the man's wealth can be worn by his wife on her neck or arms or fingers. Eventually many village products are bought by merchants in the cities and by exporters who supply foreign markets.

**Modern industries.** The people of the subcontinent have long been noted for their great skill in making things of cotton and metal and wood. But these articles can be

produced much more cheaply by machine than by hand with simple tools. The factories are unevenly distributed. They have been developed only in the larger cities, and the articles they turn out are usually made from raw materials obtained near by.

The manufacture of textiles is the characteristic industry. Because it is so warm on the subcontinent, most of the people wear cotton clothing. Although the demand for cotton is large, most of it is satisfied by the mills of India and Pakistan. The jute industry employs almost as many people as the cotton industry.

Paper is manufactured from the waste materials of the textile factories. Sugar refineries, coconut and oil mills, and leather tanneries are among the other factories.

India has some valuable mineral deposits. It leads in the production of manganese, a mineral used in making high-grade steel. It has large iron deposits which like Canada's deposits in Ungava can be mined by open-pit methods. India also has good soft coal. Manganese, iron ore, and coal are found close together about 150 miles west of Calcutta. There, at Jamshedpur, is located the largest iron and steel plant in the Commonwealth, the Tata Iron and Steel Works. In such crowded lands, labor is so abundant and cheap that the mills can produce iron and steel at a low cost.

## Seaports and Inland Cities

The subcontinent has few good ports. Many vessels must transfer their cargoes to lighters because of shallow water and sand bars. Lighters are large, open, flat-bottomed boats used in loading and unloading ships. The large cities are connected by railroads, highways, and air lines, but, as yet, the masses of people are not much affected by these conveniences. The poor man in the city



lives little better than the farmer in the village. His home is a dark airless building. Whole families, six, ten, or even twenty people, crowd into one room, with no light, no water.

### **Calcutta, rich city of the delta.**

Calcutta is India's largest city and leading seaport. It is built on the delta of the Ganges, about eighty miles from the Bay of Bengal. A branch of the Ganges serves as its harbor. The sluggish stream is narrow and winding, and must be dredged continually to keep it free from silt. For ten miles its banks are lined with docks, and hundreds of small river boats compete with ocean freighters for space in the crowded harbor.

Calcutta is the centre of a large trade with the rich farm lands of the Ganges and Brahmaputra valleys. You can see on the map on pages 270-271 that Calcutta has rail connections with cities in all the important producing areas of India and Pakistan. Its position has helped it to become an industrial city. Coal is received from mines located between Calcutta and Delhi. Cotton and cotton cloth are shipped in from the Deccan. Tea comes from Darjeeling, in the foothills of the Himalayas. Darjeeling is also important to the residents of Calcutta who wish to escape the hot wet season in the delta. It is one of the famous *hill stations*, or mountain resorts, of India.

**Bombay, India's most modern city.** Together Calcutta and Bombay handle four-fifths of all the foreign commerce of India. The harbor of Bombay is excellent and beautiful. The city is



*J. H. Lobnow*

**Traffic in Calcutta's streets is much like that of other large cities.**

built on an island. The channel between the island and the mainland is narrow. Railway trains from the mainland enter Bombay. The water is quiet even during the summer monsoon, with winds from the west and southwest.

Bombay is not an old city, and many modern buildings are built on hilly sections overlooking the sea. Some of the wealthiest people of India have their homes in Bombay.

**The natural harbor of Bombay has many modern improvements.**

*Fritz Henle*







A map of the city of Bombay.

There travellers find the comforts of the western world and the splendors of the Far East. Bombay has become an important commercial and manufacturing centre largely because of its safe harbor and its nearness to the cotton-growing region of the rich Deccan. Its cotton mills are operated by hydroelectric power generated along the Western Ghats.

A map of the harbor of the city of Madras.



With what large cities is Bombay connected by rail?

**Madras, India's third-largest city.** Madras is a sprawling city, built on a dry, flat, sandy plain. The city is not very wide, but it extends for about ten miles along the coast. It has an artificial harbor, which makes it possible for boats to anchor a short distance from shore. Describe the plan of the harbor and estimate its size. The map on this page will help you to do this. You can see on the physical-political map that Madras has rail connections with other ports of India.

The leather industry leads all others in Madras. Skins and hides represent more than half the value of the city's exports. Some are tanned before they are exported, others are left untanned. The bark of a native shrub is used in the tanning process. Both raw cotton and cotton goods are also shipped from Madras. Hydroelectric power for the mills and factories is brought from the Western Ghats.

**Delhi and New Delhi.** You can see on the physical-political map that two cities, Delhi and New Delhi, stand very close together. New Delhi consists chiefly of government buildings and is the capital of India. Delhi has become an important trade centre, for it is located between the Ganges Valley and the Punjab. For what crops is each of these great areas noted? Delhi has benefited by its location on the route between Calcutta and Khyber Pass. As a result of its central location, the city has become an important railroad centre. Besides the usual handicraft industries, Delhi has cotton mills.

#### RAW MATERIALS AND EXPORT

Before you began the section on manufacturing and trade, you made lists of raw materials and exports that come from farms. Now add raw materials produced in India, Pakistan, and Ceylon and other products exported. Using your lists, write a short paragraph about manufacturing or trade in India.

# THE GEOGRAPHY WORKSHOP

By great-circle measurement on a globe, what part of Canada is nearest the city of Calcutta? What part is nearest Bombay? If you were to fly from your home to Ceylon by the shortest route, what countries would you cross? In which direction would you start?

## I. THE WORLD

### IN YOUR COMMUNITY

Our oldest relationship with the people of the Indo-Pakistan Subcontinent is through our language. In ancient times a people moved into the subcontinent from the plateaus of Iran. Every student of the language we speak is interested in those people. Their language was Sanskrit. It belonged to the Indo-European family of languages. English and nearly all other European languages belong to this family. So also do most of the languages spoken in the subcontinent.

The oldest books in any Indo-European language are in Sanskrit. If you saw a list of words from these books, you would find in many of them a faint resemblance to English words. If you wish, you can find some Sanskrit words by looking up certain English words in an unabridged dictionary. Try the following words: father, brother, star, cow, milk. The dictionary lists related words in other languages. The ones marked (Skr.) are in Sanskrit.

### *People you would like to meet*

Probably you can find a war veteran who was stationed somewhere on the subcontinent. Ask him to tell you how he travelled to India, what parts he saw, what the climate was like, what plants grew there, and how the people made a living. If you know someone who has visited the subcontinent as a tourist, ask the same questions.

Few people from India, Pakistan, and Ceylon have come to live in Canada. If your home is in a large city, however, you may be able to find someone from there.

There is one imaginary Indian boy you will surely want to meet. He is Mowgli, the hero of *The Jungle Book*, by Rudyard Kipling. In that book you will also get acquainted with other people and some of the animals of the country.

### *What we get from India*

Canadians do not import so many things from India, Pakistan, and Ceylon as from some of the other regions you have studied. We import cowhides and sheepskins, but you cannot tell whether or not your shoes are made of leather from India. Manganese is imported for our steel mills, and mica and shellac are other imports, but you cannot use them for an exhibit.

You should be able to make a small exhibit of foods from the subcontinent. Try to discover how much of the tea used in Canada comes from India, Pakistan, Ceylon. You may be surprised when you learn how much of our tea is produced in those countries.

Your exhibit will not be large, but you can add to its interest with a piece of burlap. As you know, burlap, or the jute fibre from which it is made, comes from the subcontinent. Use a piece of burlap as a background for your exhibit or as a cover for the table. On it paint Indo-Pakistan designs with poster colors. You will find examples of such designs in the picture on page 312. Look for additional examples in the pictures in this book and in other books and magazines.

A piece of burlap hung on the wall makes a good bulletin board. You may pin up pictures of scenes in the subcontinent. If you cut pictures from magazines, be sure to ask permission.

An outline map of the Indo-Pakistan Subcontinent is very easy to draw. If you wish, you may draw one on your piece of burlap. Make it as large as possible. Then fasten your pictures to the map. As nearly as you can, put each picture in the region in which it was taken.

## II. A MAP TO MAKE

Trace an outline map of India, Pakistan, and Ceylon from the map on pages 270-271. Using the map on page 280, show in color where rice is grown in these countries. Using the map on page 76, show by another color where wheat is produced. You need put on your map only the areas of heavy production.

Compare your map with other maps in this book. List all the differences you can find between the areas of wheat production and the areas of rice production.





Philip Gendreau

### III. WHAT YOU CAN READ FROM PICTURES

The picture on this page was taken in the valley of the Indus, a little below the place where the Indus crosses the meridian of 70°. How much rain does this region have? The place where the picture was taken is to the right of the river. What is the natural vegetation? How do you think the farmer gets enough water for his crops?

The large jars are made of rough pottery. They are used for storing grain. Much of the grain is probably millet, judging from the product maps. What other grain might you find in them?

The ox is the hump-backed native variety. The hump over the shoulders is made up of muscles and fat. These cattle can remain healthy in hotter climates than most cattle can endure. For this reason they have been introduced into the warm regions of the United States, South America, and Africa.

Of what material is the building made? Do you think the builders tried to make it pleasing in appearance?

Behind the slanting wall at the right is a stairway. Where does it lead?

What would you probably see in a Canadian farmyard that you do not see here?

### IV. POPULATION

Turn back to study guide number 1 on page 301 and read it again. Which of the following facts about the Indo-Pakistan Subcontinent help to answer the question?

Remember that most of the people of the subcontinent are farmers.

1. Much land is suited to the growing of rice, which produces most food to the acre.

2. In the most densely populated areas, such as the lower Ganges Valley, the land is level and the soil is fertile.

3. Parts of the subcontinent have many people, others have few people.

4. May is usually the hottest month in most of India.

5. Most farm work is done with primitive tools.

6. There are many rivers which supply water for irrigation.

7. The subcontinent has more cattle than any other country.

8. Because of the warm climate, both winter and summer crops can be grown.

9. Farmers live in crowded villages.

10. Sometimes the rains come too late to save the crops.

### V. PICTURES TO SORT

Imagine you have ten pictures of products that are piled on the wharves of a seaport in the Indo-Pakistan Subcontinent. The photographer forgot to indicate which ones had just been taken off ships and which were waiting to be loaded on ships. Can you help him sort them?

1. Hand-woven carpets and shawls
2. Crated automobiles
3. A dredge for digging irrigation canals
4. Bales of cowhides
5. Rolls of burlap
6. Machines for cotton mills
7. Boxes of tea
8. Bales of jute fibre
9. Bales of cotton
10. Bags of sugar

### VI. NEWS FROM INDIA, PAKISTAN, AND CEYLON

People used to speak of "unchanging India." Watch for news which indicates that the Indo-Pakistan Subcontinent is no longer unchanging. The people have many problems to solve, from how to produce enough food for everyone, to a kind of government that is satisfactory for all groups. Watch for news about how they solve their problems.



# *Living in Southeastern Asia*

## JUNGLES AND CLEARINGS

Look at the shaded area on the map on this page to see how scattered the various parts of southeastern Asia are. A broad peninsula juts southward from China. From this broad peninsula extends another peninsula—a long, narrow one that stretches almost as far as the equator. And to the south and east are sprinkled thousands of islands, some large and some small.

**The nature of the jungle.** Except on the very high mountains, southeastern Asia is a land of constant summer. The year is divided into two distinct seasons—a wet season and a dry season. During the wet season in most

of the region the earth is so thoroughly drenched that it never dries out completely. In a climate so warm and moist, plants grow very rapidly. It takes only three or four years for trees in the jungle to reach the size of large trees in your community.

There are jungles of bamboo where plants grow so thick that a man cannot travel through them without cutting a path as he goes. And there are dense, forested jungles where trailing vines hang from branches and cling to the trunks of trees. In some places the tops of giant trees form a leafy awning through which the sun cannot shine. The shadowy forest is damp and gloomy even on





*Ava Hamilton*

Many parts of southeastern Asia are covered with tangled jungles like this dense tropical forest in the interior of New Guinea.

the brightest days. Sun-starved vegetation slowly dies. There is a constant struggle among the plants to reach the light which means life to them. Flowers and fruit are found only in the treetops. Butterflies dart among the brilliantly colored blossoms, and the fruit attracts birds, insects, and animals that can climb.

Southeastern Asia is not one vast jungle. In many places the land has been cleared for farms. Wide fertile plains along the rivers are cultivated, and some mountain slopes are terraced. In places the land is drained, and elsewhere it is irrigated.

Where vegetation is thick and green, clearing the land is difficult. The natives cut the brush and branches. When the wood has been thoroughly dried out, they set fire to it. There is little danger of setting the

forests on fire, because they are so damp. The ashes from the brush and trees act as a fertilizer. Actually, not all tropical soil is fertile, even though vegetation is very thick. Heavy rains on the hillsides wash away the loose material. In the lowlands, the water soaks down through the soil, dissolving and carrying away the minerals needed by plants for food.

After a few crops have been planted and harvested, the soil begins to lose its fertility. Weeds spring up in the clearing. Soon the natives leave it and make a fresh clearing. Then gradually the old fields become a part of the jungle again.

### **Wild animals in the jungle.**

The abundant plant life in warm wet equatorial regions helps to explain why so many wild animals are found there. In the rivers of southeastern Asia lives the lazy, long-snouted crocodile.

Elephants are captured in the jungles and trained to pull heavy loads and pile logs. Tigers prey upon deer and antelope, which, in turn, feed upon the abundant tropical vegetation. In the dense forests live huge apes called orangutans, and almost everywhere many different kinds of snakes, monkeys, and birds are found.

The smaller types of animal life are even more annoying and dangerous than the greatly feared tiger and crocodile. Rats and cockroaches invade the houses, and gnats, flies, mosquitoes, and many other insects swarm everywhere. The bites or stings of some of them are very painful. Others carry germs of dreaded tropical diseases.

**Plantations managed by Europeans.** The French, Dutch, and British have established huge plantations in southeastern Asia. There



valuable tropical crops of the greatest variety are produced. Rubber, sugar, tea, and coffee are only a few of these.

Plantation agriculture has succeeded in the tropical lands of southeastern Asia for a number of reasons. First, there is a great demand for tropical products in Europe and other middle-latitude lands. Second, there is an abundance of native labor to do the work on the plantations. Third, the climatic conditions are favorable. In southeastern Asia, as in China, Pakistan, and India, the monsoons bring an abundance of rain during June, July, August, and September. The winter monsoons blowing out from the dry heart of the continent bring very little rain. The dry season is needed for many plantation products. It provides weather suitable for harvesting such crops as sugar and coffee.

**Raw materials and industries.** Southeastern Asia supplies large quantities of raw materials to the industrial regions of the world, but there is very little manufacturing in this region. There are only a few modern factories, and most of these take the raw products of the mines and plantations only through the first simple steps of the manufacturing process. Sugar mills extract the juice from the stalks of cane and boil it down to make raw sugar for further refining. You will see other examples as you read.

One of the most important native industries is the weaving of cloth. Thread is imported for the looms of cotton mills. There are also workshops where leather goods, cigarettes, cheap furniture, and tools are made.

Much of the handwork is done in the open. Perhaps you have seen pictures of native workers sitting in front of their bamboo huts making cloth, scraping out logs for canoes, or weaving long strips of bamboo into baskets. Some of the things they make have great artistic value. One kind of cloth for which the region is famous is made from the inner fibre of the bark of a certain kind of mulberry tree. This wood fibre is peeled

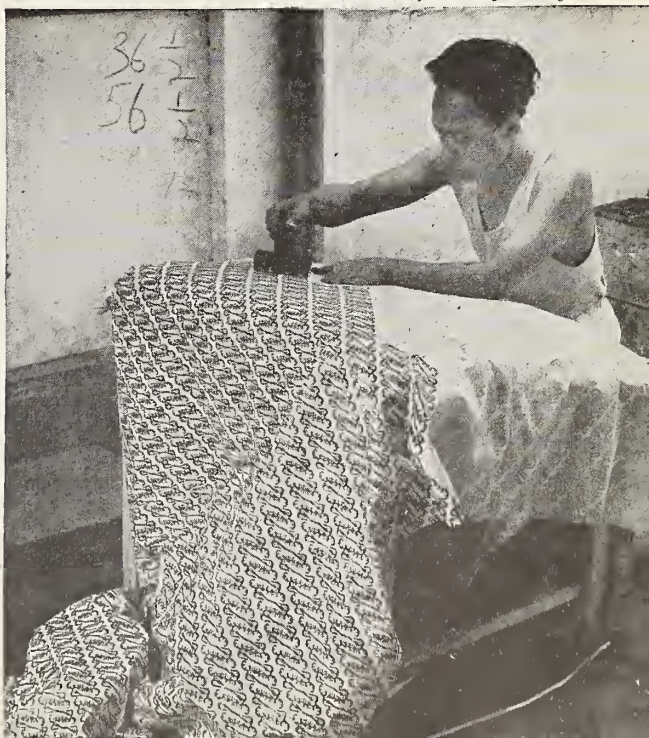
off very carefully and then pounded until it is thin and firm. Another kind of cloth is made from fibres drawn from pineapple leaves. Cloth of all kinds is dyed in beautiful designs. Very few of these hand-made articles are produced in large quantities to sell, but they are collected by tourists and importers who take them all over the world.

**Study guides.** The following questions will help you in your study of southeastern Asia. Look for answers as you read.

1. In what ways do the countries of southeastern Asia resemble India and Pakistan? In what ways are they different? (II)
2. What kinds of farming are carried on? Why is this a good part of the world for plantation agriculture? (II, III, IV)
3. How has trade between southeastern Asia and the industrial countries of the world benefited both? (I, IV)
4. What kinds of business are carried on in the cities of southeastern Asia? (I, V)
5. How do the Philippine Islands resemble the islands of Indonesia? (I, II)
6. Why are there great differences in density of population in southeastern Asia? How can Java support so many people? (II)

This Javanese artist is stamping a wax pattern on a piece of cotton cloth before dyeing it.

*Deane Dickason from Ewing Galloway*





# WHAT WE CAN READ FROM MAPS

## LOCATING SOUTHEASTERN ASIA

1. Southeastern Asia is darkened on the map on page 317. You have learned that it includes two peninsulas and hundreds of islands. Now turn to the map on pages 270–271 and find this same area.

2. What are the names of the four countries on the mainland of southeastern Asia? Trace the boundary of Burma. How far south does Burma extend? What parts border the Bay of Bengal? Study the shape of Indochina. Does it extend as far south as Burma? In what direction is the South China Sea from Indochina? Which country helps separate India from China?

3. Does Siam touch China? About how much farther south than Burma does it extend? It has coast lines on both the Indian Ocean and the South China Sea because it includes a part of the Malay Peninsula. About what is the width at the narrowest point of the peninsula? What country occupies the end of the Malay Peninsula? Color the part of your outline map of Asia that shows southeastern Asia. Include all the islands as well as the mainland countries. Now print the names Burma, Indochina, Siam, and the Malay States in the correct places on your outline map.

4. Find Singapore, the large city at the southernmost point of the Malay Peninsula. We may think of this city as being the trade centre for southeastern Asia. Using a globe or the world map on pages 10–11, trace the shortest route that a ship could follow in going from London to Singapore. Is it possible for ships to go from Great Britain to southeastern Asia by sailing west? If so, trace the route that a ship might follow in making this voyage.

5. When it is noon in Ottawa, what is the time in Singapore? About how many degrees apart are these two cities? You will need to use the globe or the world map in answering this question.

6. There are two island countries southeast of Asia: the Republic of the Philippines and the Republic of Indonesia. These two countries and several island possessions make up the East Indies. You should be able to recognize on the map five islands: Sumatra, Java, Borneo, Celebes, and New Guinea. Print these names on your outline map of

Asia. The two largest islands of the Philippines are Luzon and Mindanao. Add these names to your outline map.

7. Turn to the map of the Pacific Ocean area on page 33 and find the islands of Indonesia. Notice that they are ranged in two rows along the equator. Which island is nearest the Malay Peninsula? In line with it are Java and a trail of smaller islands. What large islands are in the row north of Sumatra and Java? About how far eastward does New Guinea extend? About how far is the southern coast of New Guinea from Australia?

8. Turn to the physical-political map on pages 270–271. Notice that the Philippines extend in a north and south direction. What large islands of Indonesia are south of the Philippines? What country of Asia is north of them? If a ship from Vancouver follows a great-circle route to Manila and Tokyo, which port will it reach first?

## SURFACE, CLIMATE, AND PEOPLE

1. Turn to the physical-political map and notice the mountain ranges of continental southeastern Asia. They extend north and south, and between them lie great river valleys. Does the altitude in general increase or decrease from north to south? In what direction do you think it would be easiest to travel?

2. Most of the lowlands in these countries are made of mud and sand deposited by rivers. What rivers flow through the lowlands in Burma? What river flows southward through the heart of Siam? What great river has its source in the Tibet Plateau and its mouth in Indochina? You can see that these rivers have built large delta plains. In Burma the people live chiefly along the Irrawaddy River. In Siam they live in the wide valley of the Menam River. And in Indochina the two most thickly settled areas are the delta lands of the Mekong and a narrow coastal plain in the east. What is the density of population in each of the deltas? There are no great river valleys in Malaya. What part of the Malay Peninsula is most densely populated?

3. Look again at the physical-political map and follow the Tropic of Cancer across Asia. What part of southeastern Asia lies

south of this line? What length of growing season is suggested by this location? Check your answer with the map on pages 14–15. Turn to the map on pages 12–13 to see what the rainfall of most of southeastern Asia is. What parts of India have a similar amount of rain? What part of China? Notice that a few places have less rain. These are places protected from monsoons by mountains.

4. Look at the population map on pages 18–19. Are the continental countries of southeastern Asia more or less densely populated than India? What large island in Indonesia has a very dense population? What two large islands in Indonesia have a very sparse population? On which island in the Philippines do most of the people live? Which has a very sparse population?

## LANDS AND PEOPLES OF THE PENINSULAS

Southeastern Asia is shut off from India by a mountain range that extends southward from the Himalayas to the Bay of Bengal. Find this range on the physical-political map. These mountains have very few passes, and they form a natural barrier between Burma and India. Many large streams of southeastern Asia flow southward through deep canyons separated by narrow, rugged divides. The walls of the canyons are steep, and they can be climbed in only a few places. These mountains and canyons make the building of roads difficult for engineers and workers. Then, too, much of the land is covered with dense jungles through which they must hack their way. They are stung and bitten by insects, and they must do all their work in the dampness and tropical heat of monsoon lands.

The mountains that lie between Burma and the countries to the east are somewhat easier to cross than those which lie between Burma and India. To the east trade routes connect Burma and its neighbors. The Burma Road was built and used for transporting war supplies during World War II. The road starts at Lashio and winds its way northeastward to Kunming. Another highway connects Burma with northern Siam. But there are no good highways and no railroads connecting Burma with India.

The people of southeastern Asia make good use of waterways. Often it is easier to reach a neighboring country by water than by land. The population is densest along river valleys and near the coasts. Almost every-

one is familiar with boats, and children learn to swim almost as soon as they learn to walk. The people send most of their products to market by river, and at the water front they receive needed supplies.

### Commercial Products

The peninsulas of southeastern Asia are important sources of raw materials and food products. They are not densely populated, as are the other eastern countries you have studied, for manufacturing has scarcely begun. Large surpluses of food and raw materials can be sold to the industrial countries of middle latitudes and to neighboring countries in need of additional food.

**The Burma Road, connecting Burma with China, winds and twists its way up steep mountain grades.**

*U. S. Signal Corps Photo*







A map showing the rubber-producing regions of Asia.

**Growth of the rubber industry.** The rubber industry is rather new in southeastern Asia. For more than a century after its uses were discovered, most of the rubber used in the world was supplied by Brazil. That country was the original home of the rubber tree. An Englishman who had spent many years in the jungles of Brazil changed all that. He travelled far up the Amazon, carefully gathered and packed some seventy thousand seeds, and then sailed for home. A few years later, vigorous young rubber trees were thriving in the lands of southeastern Asia. The seeds that had been shipped from Brazil were planted in hothouses in England, and about two thousand young trees came up. These were shipped to a new home in Ceylon. Gradually more seeds were obtained as the trees grew, and more young rubber trees were distributed from Ceylon to other tropical countries.

The natural environment of southeastern Asia is excellent for growing rubber trees. Plantations were started on low coastal plains and rolling hills where the soil was fertile and well-drained. Year-round high temperatures and abundant rainfall speeded the growth of the trees. By the time they were five years old they could be tapped for rubber.

The expanding automobile industry created a great demand for rubber, and more and more plantations were started. Manu-

facturers began to look to south-eastern Asia for rubber instead of to Brazil. Before World War II, the British section of the Malay Peninsula alone produced and exported more than half of all the rubber used in the world. South-eastern Asia as a whole produced more than 90 percent of the world's supply. Look at the map on this page to see where the plantations are located.

### Work on a rubber plantation.

Almost every farm in southeastern Asia has a few rubber trees, but most of the rubber for export is produced on a large scale. Plantations are usually located close to the coast or near a railroad, for raw rubber is bulky and each plantation produces very large amounts. Plantations vary in size, but most of them contain several thousand acres. They are laid out and tended as we tend orchards. On each acre there are about a hundred full-grown trees.

The trees stand close together, so that one man can collect the milky sap, or *latex*, from about four hundred trees each morning. He carefully cuts the bark with a sharp knife and removes a shaving. If he cuts too deep, the tree may die; if he doesn't cut deep enough, the latex will not flow freely. He must cut to exactly the right depth—an operation which requires skill and practice. A cup is fastened below the cut to catch the latex, which oozes out drop by drop. Later all the cups are emptied into pails or small tanks, which are then taken to the factory as quickly as possible. There the latex is strained into large vats. Acid is added, and the latex becomes thick and spongy within an hour. This spongy mass is pressed between rollers into sheets. Then the rubber is hung up to dry. After it has been dried, it is ready to be packed and shipped.

Not all the land of the rubber plantations is planted with trees. Rice and other food crops are raised on these plantations, and

sometimes other cash crops are given space. Low, swampy places are drained. Workers usually live in rows of houses provided for them, and medical care is provided. Warehouses, power plants, offices and residences of managers, and rubber mills are located on the plantations, and often small railways connect the various sections.

**Rice to sell.** We have seen that all tropical monsoon lands grow rice. Although China, India, and Japan lead the world in the production of rice, they have none to sell to other countries. Indeed, they usually import large quantities of rice each year. They are so crowded that food must be brought in from the outside to supply the needs of the millions of people. Burma, Siam, and Indochina are much less densely populated than are the countries of eastern Asia. On their warm, wet lowlands each of these countries grows enough rice to supply the needs of its own people and still have large quantities left for export. In fact, Indochina, Siam, and Burma lead the world in exporting rice. Malaya, however, must import rice.

Rice is grown in these countries wherever enough moisture is provided by rainfall or irrigation. All the people are concerned with rice in one way or another. Some grow it, others market it. They all eat it. Turn back to the map on page 280. Compare the areas of heavy rice production on this map with the same areas on the physical-political map. Where is most of the rice grown?

### **Products of the dry regions.**

Although most of southeastern Asia has a rainy monsoon climate, the central part of Burma is different. Turn to the rainfall map, pages 12-13, and locate this drier region. How much rainfall does this region have?

From the tropical jungle and ricelands of the lower Irrawaddy Valley, the vegetation gradually changes to poor, scrubby bushes. In central Burma the agriculture is different from that in the lower lands. Some of the land is irrigated, but rice is not the leading crop. Beans, cotton, millet, and peanuts are grown without irrigation, and herds of goats graze on the poor pastures. This region also has been important for the production of petroleum of very good quality.

**Teak lumbering.** On the low, hilly lands of southeastern Asia grows a broadleaf tree that provides a very valuable wood. This wood is called teak. It contains an oil that helps to prevent it from warping or rotting in damp weather or in water. It resists the attacks of termites and does not burn easily. Because of these qualities, teakwood is especially good for shipbuilding and for building wharves and piers. In moist climates it is also used for making furniture and for various kinds of wood carving. Articles made of teak have been known to last more than a thousand years.

Teak lumbering is a difficult industry. The green wood is so heavy that it will not float. Usually the trees are *girdled* before

**In southeastern Asia large, powerful elephants often are used in teak lumbering. This one is lifting a dry teak log.**

*Ewing Galloway*







*Courtesy Netherlands Information Bureau*

**In this mine tin ore is dredged from the river.**

they are cut down. When a tree is girdled, its bark and sapwood are cut completely around the trunk. The huge trees soon die. Two and even three years may pass by. The trees still stand, but they lose much of their weight as they dry. Finally they are cut down. Where large companies do the logging, railroads are built for hauling the logs to lumber mills. Where there are no railroads, and very few roads of any kind, elephants are trained to pull the logs to streams. There the teak is piled on rafts and floated to mills or to ports.

Teak is a major export of both Burma and Siam, and it is also exported from other parts of southeastern Asia. The government in Burma wants to preserve teak forests, so government officials choose and mark trees to be cut. Similar conservation is practised in Siam and other places. To increase the supply, teak plantations have been started.

**Oil and tin.** Burma has large oil deposits. The central part of the Irrawaddy Valley was covered with oil derricks and, before World War II, Burma's petroleum

production was rated one of the largest of all the far-eastern Asiatic countries. Find Rangoon on the physical-political map. Oil was transported from the fields through pipe lines to refineries near Rangoon. From there, large quantities were exported.

A large part of all the tin mined comes from southeastern Asia. Malaya and Siam together produce over half the world's supply. The largest deposits are found in Malaya, which ranks first in production. The picture on page 36 shows the simple equipment used by some Malay tin miners. Not all Malay tin is mined in this simple manner. Large, heavy machinery is used in some places. Tin ore is obtained from gravel beds. The gravel is washed down from the mountains that have beds of solid rock containing tin. The rock slowly crumbles when exposed to the weather, and mountain streams wash the pieces down. Some of the ore is obtained from open pits in gravel deposits in valleys and some is scooped from the beds of rivers. The tin ore and rock are easily separated by washing, for the ore is heavier and sinks to the bottom.

## Seaports and Capitals

Turn to the physical-political map to see where the largest cities of the peninsulas are located. Since you know that this is a region interested in trade rather than in manufacturing, you can understand why the largest cities are seaports. They are also centres of government. Use the map on pages 18-19 to give one reason why the locations of these cities make them suitable for capitals.

**Centres of trade.** Rangoon, near the mouth of the Irrawaddy River, is the capital and chief seaport of Burma. Much of the business carried on in Rangoon depends on river traffic. Although it is not located on the Irrawaddy itself, it is connected with that great river by a canal. In the city's large mills rice is cleaned and polished for



export, for Rangoon is one of the greatest rice markets in the world. Elephants are set to work piling up teakwood logs that have been floated on rafts down the Irrawaddy from the forests of northern Burma. Rice and teak are Rangoon's leading exports. Oil piped from the north is also shipped out.

Turn to the map and find Bangkok, the capital and largest city of Siam. You can see that Bangkok, like Rangoon, grew up near the mouth of a river. The Menam is thronged with boats that bring farm produce and passengers from northern Siam. For many years the Menam was the main street of Bangkok. Canals formed a network from the river, and houses were built on rafts or on pilings. Bangkok was called the "Venice of the East." Today broad, tree-lined avenues have replaced a number of the old canals. Instead

of houseboats, there are well-built brick dwellings. Bangkok is now modern in many ways, and the spires of more than three hundred temples give the city distinction.

Indochina consists of three territories: Vietnam, Laos, and Cambodia. These territories are independent states within the French Union. Indochina is one of the chief rice-producing areas in southeastern Asia. But the terrible destruction caused by World War II and the more recent war against the Communists has slowed up production. Two of the larger cities of Indochina, Hanoi in the north and Saigon in the south, are important international airports.

**Singapore, where sea routes meet.** Find the Strait of Malacca on the map. It leads from the South China Sea to the Indian

**One of the old business streets in Bangkok. On this crowded, busy canal natives barter and sell their farm products from picturesque sampans. The canal is one of the many waterways that connects with the Menam.**

*De Cou from Ewing Galloway*





Ocean and is the gateway between eastern and western countries. Through this strait passes a strange assortment of vessels—ocean liners, cargo boats, sampans, and junks. On a hilly, tree-covered island near the southern tip of the Malay Peninsula stands Singapore. Ships find this port a convenient place to stop, for it is a free port. No duties or taxes are charged on imports and exports. Hundreds of small boats from neighboring islands and countries bring cargoes to be reshipped from Singapore. Behind it lie regions rich in rubber and tin.

Singapore Island, along with Christmas Island and the Cocos-Keeling Islands southwest of Indonesia, make up the British colony of Singapore. Thousands of ships from many different nations stop at Singapore. But it is particularly important to the British.

many raw materials. Some they use in their own factories; some they ship to other countries.

Singapore, like many cities in eastern and southern Asia, is a blend of the old and the new. Most of its residents have adopted western ways. It has fine stone buildings, wide boulevards, and air-conditioned restaurants and theatres. Yet, in some parts of the city thousands of natives continue to live in small huts crowded close together.

#### A TOPIC FOR CLASS DISCUSSION

The way people live and work in both eastern Asia and southeastern Asia has been influenced to some extent by American and European ways of doing things. The influences have been different in the two areas. How have they been different?

## LIVING IN THE EAST INDIES

The islands of the East Indies stretch eastward from Asia for thousands of miles. Some of them are large. New Guinea and Borneo are the second- and third-largest islands in the world. Others are so small that they are not shown on your map. In olden days these islands supplied many of the spices that Oriental countries sold to European traders. Then the Europeans decided to trade directly with the islands of the East Indies. Adventurers from Portugal reached the islands early in the sixteenth century. The news started traders of other European nations sailing toward the Far East. Spain, Great Britain, and the Netherlands entered the contest. One power after another held sway. In recent years the Republic of Indonesia has won its independence.

### The Islands of Indonesia

Do you remember the names of the islands which form the Republic of Indonesia? Java, Sumatra, Celebes, most of Borneo,

about half of New Guinea, and many smaller islands make up this group. The distance between its western and eastern boundaries is greater than the distance between our Pacific and Atlantic coasts. The climate is hot and moist. The mountainous regions are comfortably cool, for the average temperature decreases about one degree for every 330 feet of altitude.

The surface of nearly every island varies from steep mountains to swampy coastlands. On some the soil is rich and fertile. On others it is poor and thin. Some of the islands are covered with tropical jungles. Others are intensively cultivated. Some produce crops important in world markets. Others have only subsistence farming. A few have rich mineral deposits. Many have good seaports, and all form a natural link in the great trade routes of the East.

**Living in jungle and village.** Ways of living vary from island to island and from district to district. Some of the people

live much as we do. In the vine-covered, tangled jungles, however, ways of living are almost the same as they were in prehistoric days. Do you remember what you read on page 38 of how people lived in the Stone Age? In Indonesia the natives are in all stages of civilization. There are some who are hunters and food gatherers. They hunt with spears, bows and arrows, and even blowpipes with poisoned darts. These natives don't wish to settle down in one place. They wander about constantly in search of food, and they sleep in shelters made of sticks and leaves.

Most of the people of the Indonesian islands, however, live in small villages. The farmers who burn out clearings move every few years because the soil loses its fertility. Those who irrigate their fields live in permanent villages. The houses are usually simple. Some are built on the ground. Others are built on raised platforms because of the damp climate. Farm animals find shelter beneath them. The thatched grass roofs are made steep so that they can shed water.

There is almost no industry in the islands. Most of the people farm. Rice has the main role in the natives' diet, but many vegetables are eaten, too. Much more fish than meat is eaten. Many methods of fishing are used—nets, lines, and traps. In some places fields are reflooded after the rice harvest, and fish are raised as a "crop."

Most of the heavy work is done by water buffaloes. Travel and transportation are changing wherever good automobile roads and railroads have been built. But in the more remote districts carts are drawn by buffaloes, and most of the people walk.

On your physical-political map find Jakarta, the seaport on Java's northern coast.



*Albert G. Moerlin*

**Houses built on raised platforms in a village in New Guinea. A small vegetable garden near the house is protected by a fence.**

Jakarta is the capital of the Republic of Indonesia. It is connected by rail with every important section of Java, and it serves as a market for all the islands. To Jakarta the people take products for export, and from there imported goods are distributed. The chief imports include textiles, iron and steel goods, rice, and cement.

### **Java, richest island of the East Indies.**

Imagine an island about the size of the Maritime. Now try to imagine almost four times as many people as in all Canada crowded into that island. There you have a picture of densely populated Java, where almost half of all the people of the East Indies live. A small part of the land is too mountainous to be used for farming, and swamplands bordering the coast are covered with dense tropical jungles. You can see how crowded the better parts of the island must be.

In the other large islands of the East Indies, vast areas of swamp and mountain



slopes remain covered with jungle vegetation. In Java, almost every possible acre of land has been cultivated, from sea level to altitudes of 4000 feet. The southern part of the island is a continuous mountain chain. There are many volcanoes, both active and inactive. The natives of Java have experienced terrifying volcanic eruptions. Many villages have been destroyed and many people killed. But again and again the natives risk the danger of new eruptions to cultivate the slopes as high as they can. Nowhere else is the soil as fertile as it is around the volcanoes. The materials thrown out from the craters enrich the soil, and abundant rainfall and many streams make irrigation possible. Because of these advantages, the people of Java are able to live almost entirely on the products they themselves raise.

Highways and railroads connect the different parts of the island. Even in the more remote corners of Java, where transportation is not yet developed, villages are linked with one another by roads. Amazing progress is being made in improving health conditions. Certain dreadful diseases, such as typhoid and cholera, which once claimed thousands

of lives, have been brought under control. Swamps and lakes and ponds with stagnant water are drained whenever possible, for it is in such places that the mosquitoes which carry the malaria germs lay their eggs. Sometimes the water is coated with oil, so that the young cannot rise to the surface for air. Drinking water is boiled, and vaccinations are given.

### **Sumatra, another productive island.**

Sumatra sprawls across the equator, with tropical sunshine beaming down on its dark-green forests and monsoon rains drenching its mountain sides. The narrow Strait of Malacca separates it from the Malay Peninsula and Singapore, and the Sunda Strait separates it from Java. On the physical-political map, find the mountain chain that extends from one end of Sumatra to the other. In the west the mountains crowd the narrow coastal plain, but in the east gentle slopes and foothills gradually merge into swamps and marshes.

Sumatra's farm lands have not been developed so extensively as those of the neighboring island, Java. This is largely because much of the lowland is swampy and some of

**A modern highway connecting two villages in Java. Notice the terraced rice fields that border the road.**

*Courtesy Netherlands Information Bureau*





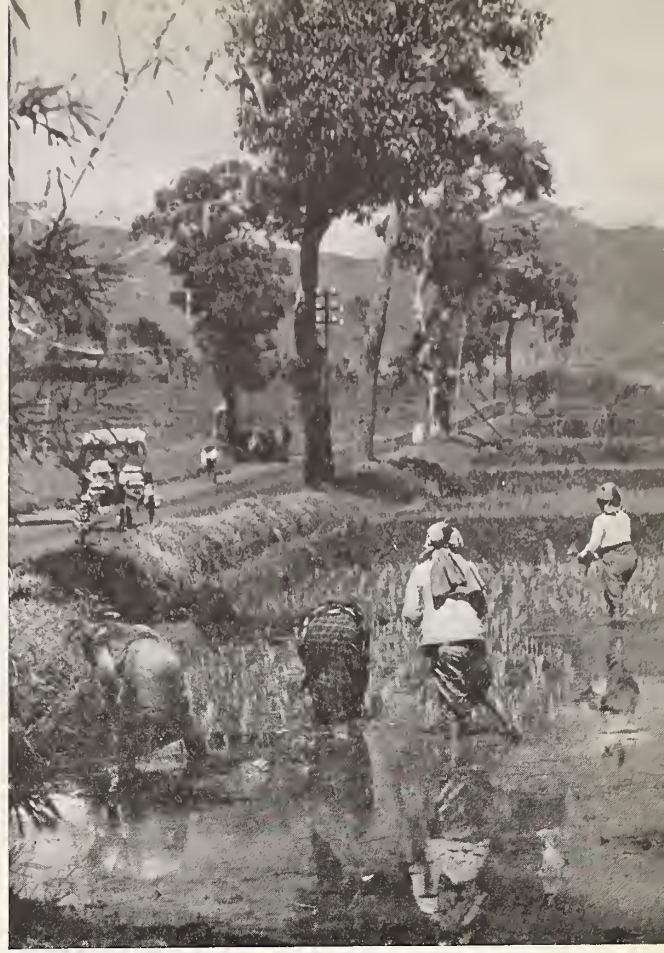
the highlands cannot be cultivated. Sumatra is much less densely populated than Java. The largest groups of people live in regions where there is volcanic soil, but much of the island is still heavily wooded jungle land. From these forests come huge supplies of teakwood and bamboo. The natives fish and grow rice. Many of them work on great plantations supervised by Europeans. Sumatra has many different minerals. A third of all the tin of Asia comes from two islands near its eastern coast. Sumatra's most valuable mineral is oil.

There are many rivers on the island, but most of them are too small or too swift to be of much use. The main towns are connected by good roads, and there are three railroads, shown on the physical-political map. How far do they extend?

**Native and plantation crops.** Two kinds of farming are carried on in most of the islands of Indonesia—native and plantation. You already know what the leading native crop is. In addition to rice, products such as corn, sweet potatoes, bananas, and tobacco are grown in gardens. Fields are so small that machinery cannot be used. Farmers do all their work by hand.

In Java grows the kapok tree, which provides the downy stuffing used in such things as life jackets, cushions, and mattresses. The trees are grown in patches or in rows around the farmers' fields. When the pods on kapok trees ripen, they burst open. The white fluff is exposed, and the trees look as though they were covered with snow. The pods are cut from the trees, and women and children are kept busy separating the seeds from the soft fibre. Then the kapok, which is six times lighter than cotton, is loosely baled and exported.

Before World War II the leading cash crop of Indonesia was rubber. The industry was developed in the islands by the Dutch much as it was developed on the continent by the British. Most of the rubber was produced in Sumatra. There areas as large



*Courtesy K. P. M. Lines*

Telephone poles and a paved highway run alongside a flooded field in Java, where workers plant by hand small bunches of rice shoots. After harvest the rice is weighed and marketed at a rice mill.

*Deane Dickason from Ewing Galloway*







*Courtesy Netherlands Information Bureau*

**A large rubber plantation in Java. Here the rubber is collected and prepared for market. A complete community surrounds this plant, with homes for workers, a school, a hospital, and vegetable gardens.**

as Vancouver Island were covered by vast plantations. The trees were planted in straight rows, and every morning natives went out to make fresh slashes in the bark, so that the latex would ooze out. Turn to the map on page 322 to see which Indonesian island produces the most rubber.

Java has long been a producer of sugar cane. The carefully tended plantations yielded large crops, and much sugar was sold to the other countries of southeastern Asia and to Europe. Almost as important as sugar was tea. In Java it was grown on the steep mountain sides in the western part of the island. The slopes were terraced, and ditches were dug to prevent erosion. In Sumatra tea plantations were started in the northeast. Because of high temperatures and heavy rainfall, leaves could be picked several times during the year. There are many people to do the work.

At one time a large part of the coffee supply of the world came from Indonesia. But tree diseases and insects all but destroyed the industry. Brazil then took the lead in

coffee production. Now, however, a special variety of tree that will resist disease has been introduced. Coffee is grown on mountain slopes in Java and in Sumatra where there is a dry season long enough to harvest and dry the beans.

An unusual product of Indonesia is quinine, a useful remedy in controlling certain diseases. Quinine is obtained from the bark of the cinchona tree. Originally the cinchona tree, like the rubber tree, grew in South America. The Dutch started cinchona plantations on the mountain slopes of Java, and now that island provides a large part of the world's supply of quinine. The plantations in Java are managed more scientifically than those in South America.

Turn back to page 47 and look again at the picture of the native cutting a coconut to get at the meat. The islands of Indonesia are the greatest producers of copra. Copra is dried coconut meat and is a source of oil which is used in food products and in making soap. Another source of oil is the fruit of the oil palm. Like the coconut palm, the oil

palm needs a hot, moist climate. But, unlike the coconut palm, the oil palm grows in the inland parts of the islands as well as along the coast. Recently plantations of oil palms have been developed in Indonesia, and the industry is rapidly growing in importance.

**Other islands in Indonesia.** Borneo, Celebes, and New Guinea are neither so important nor so densely populated as Java and Sumatra. Chattering monkeys swing from branch to branch in the forest, and snakes slither silently over the deep moss. In the forests people are always on guard against leeches, strange worms that attach themselves to the body and suck blood until they are swollen to several times their normal size. Many varieties of birds, lizards, and insects live in the dense jungles.

Though Borneo is many times larger than Java, it is only sparsely settled. Along the coast are huge swamps dense with growth that extend far inland to the foothills of the mountains. Much of the land that is not swampy is rugged and difficult to reach. There is some good land in the many river valleys, but most of the deltas are flooded during the rainy season. Farmers have to go far inland to find land on which they can plant crops. The valleys and rivers are the principal means of reaching the interior, for there are almost no roads. Borneo has the richest oil field in the whole East Indies, and oil is the most important of its many different minerals.

The curiously shaped, sprawling island of Celebes is much like Borneo. Each of its four peninsulas has a mountain range, and most of the land is covered with forest. In areas where agriculture is best developed, coffee is the most important cash crop. There are no railways in Celebes, and very few highways. Even the rivers are useless for transportation. They are short and have many waterfalls and rapids. The people who travel must do so on foot or on horseback along narrow mountain trails.

Only a part of New Guinea belongs to the Republic of Indonesia. The island of New Guinea is larger than Borneo, but it is even more sparsely populated. Far in the interior, explorers found people whose principal tools were stone axes, knives, and chisels. Thousands had never seen a white man. They knew nothing about metals and other things we use every day. They were living representatives of Stone Age man.

## The Philippine Islands

The Philippines are made up of more than seven thousand islands. Two-thirds of these are only tiny specks in the ocean, too small to be shown on the map. Thousands don't even have names. Most of them cover less than a square mile and are inhabited only by sea birds. You have located Luzon and Mindanao on the physical-political map. Luzon is the largest and best-known of the islands. Mindanao is more sparsely populated, and much of it is still undeveloped.

The Philippine Islands are mainly of volcanic origin. Like the islands of Japan and Indonesia, they are the tops of huge mountains that have been uplifted from the ocean bottom. Most of the land is rugged, but there are some level areas in the valleys and on the coastal lowlands.

**What the islands are like.** No part of the Philippines lies more than 20 degrees north of the equator, and the islands have a warm climate all the year. Like all lands in southeastern Asia, they have a monsoon climate, and so they have a rainy season and a dry season. In the Philippines the heaviest rains are brought by the winds that blow from the south during our summer months. The dry season comes during our winter months, when the winds blow from the north.

The coasts of southern and eastern Asia are visited by severe tropical storms known as *typhoons*. The Philippines have more of these storms than any other place. Many of the typhoons start east of the Philippines,





*Ewing Galloway*

**Philippine farmers have built irrigated rice terraces as far up the steep sides of the mountains as possible.**

move slowly westward, and then turn to the north. They are widespread storms that sweep over areas from one hundred to four hundred miles wide, and the wind is very strong. Rain comes in torrents and may last for several hours. These storms do great damage along the coasts and often ruin coconut plantations and sugar-cane fields. Native houses are swept away, and boats are driven up on shore. Even cities, harbors, and large ships are often severely damaged.

There are more than 19,000,000 people in the Philippine Islands. Most of them live on the fertile lowlands of Luzon, especially in and around the city of Manila. Find this region on the physical-political map. Thousands of Chinese have gone to the Philippines, most of them as traders and storekeepers, and many Japanese migrated to the islands. Turn back to the map on pages 18-19 and compare the density of population on Luzon with that on Mindanao.

Because many parts of Luzon and the nearby islands are overcrowded, the Philippine government is encouraging people to settle in Mindanao. For a long time Filipinos have crowded along the coastal lands of that island. Much of the interior has not yet been explored. Like all pioneers, those who venture inland are confronted with many difficulties. Insect pests attack their gardens. Wild hogs can destroy in one night crops that the settlers worked long days to cultivate. Slowly people are moving inland, however, and roads are being built so that farmers can get their crops to market.

Vegetation in the Philippine Islands is as varied as it is in the islands of Indonesia. The mountains and many of the lowlands are covered with tropical forests that provide much valuable rubber. Bamboo, which is really a giant grass, is used in many different ways. A house can be built of bamboo and furnished with bamboo. Even garden



tools are made of it. Most of the natives live in houses like those in the picture on page 327.

Some of the land in the Philippine Islands is too rough and steep for farming, but there are many lowlands where the soil formed from decayed volcanic rocks is deep and fertile. Much of the hilly land has been terraced, and millions of the Filipinos are farmers. Most of them own the little patches of land they cultivate. Their wants are few, and little work is required to supply their needs. Rice is their chief food. They use more land for growing rice than for any other purpose, and yet they import large quantities from other countries.

**Raising products to sell.** Many of the Philippine farmers produce cash crops. Sugar cane, the most important crop, is grown chiefly in Luzon. The great central plain extending north from Manila Bay has rich volcanic soils, a long, warm, wet growing season, and a dry harvesting season—ideal conditions for growing sugar cane.

Abacá is another important crop. This plant looks much like the banana plant. Long leafstalks fold one over another forming a sort of trunk. The stems yield fibres that are long and strong and do not get hard or stiff when they are wet. These fibres have been given the name Manila hemp. Because of their strength and because they resist water so well, most of the fibres are used for making rope. The Philippine Islands produce almost all the world's supply of Manila hemp. There is such a demand for it that it is the second most valuable export of the islands. Most of it is shipped to North America and to Europe.

Coconuts are raised in great quantities, especially on the low, wet coastal lands. Many are grown on big plantations located on sandy beaches or on stony slopes where the roots of the plant can get plenty of water. After coconut seedlings have been set out, it is six or seven years before they begin bearing. During this long wait food crops are grown on the land between the



*Ostrander from Ewing Galloway*

A cart loaded with sugar cane is pulled by water buffaloes along a road just outside of Manila.



*Courtesy Bataan Magazine*

Abacá growing on a hemp plantation. After cutting the stalks, workers comb out or "strip" the fibres, which are hung in the sun to dry before shipping.

*Burton Holmes from Ewing Galloway*







*Ewing Galloway*

Piles of coconuts float down a river in the Philippines. When they reach the coast, the meat will be taken out and dried. The copra is then ready for export. Most of it will finally be used to make coconut oil.

young trees. Harvesting coconuts is hard work. The natives do not find it easy to cut the fruit by using a long pole with a knife attached, and to climb the trees and throw down the coconuts is even more tiring.

The natives find a use for every part of the coconut plant, but few of its products

are important in world trade. Copra, the dried white meat of the coconut, and the oil which is extracted from it are the two chief products. When the coconuts are ripe, the natives gather them, split them open, and remove the meat. The Filipinos also crush some of the coconut meat and then squeeze out the oil. Large quantities of copra are shipped to the United States and Europe. After the oil is removed from the copra, the part that remains is sold for cattle feed. The dark, stiff fibre of the husk is used in manufacturing rope, brushes, and door mats.

A map showing the area around Manila Bay.



**Manila, a great capital city.** Manila is the only large city in the Philippine Islands. In fact, it is the largest city in the East Indies and the centre of government of the Philippines. Its excellent harbor helped it become a trade centre. Manila Bay is a very large and well-protected body of water. The map on this page shows that it is almost surrounded by land. Now find the island of Corregidor, at the entrance to the bay. You can see that Manila Bay is protected on the west by the peninsula of Bataan.

Not far from Manila are the most productive farm lands of Luzon. To this port come ships from all parts of the world to take on cargoes of sugar, copra, hemp, and tobacco.



# THE GEOGRAPHY WORKSHOP

By a great-circle route, what part of southeastern Asia is nearest your home? Name some other place you have studied that is about the same distance away.

Which of the Canadian provinces is nearest the north tip of Luzon? Which province is nearest the eastern tip of New Guinea?

## I. THE WORLD

### IN YOUR COMMUNITY

Canadians have had many contacts with southeastern Asia. Many of the lands, like Malaya, northern Borneo, and eastern New Guinea, belong to the British Empire, and offer special advantages to the Dominions for trading there. They are in need of Canadian machinery and automobiles, while Canada buys their rubber, tin, and vegetable oils and fibres. Other North American countries also have close relations with southeast Asia. Mexico was actually the first to develop the trade of this area. That was in the days when Mexico and the Philippines were parts of the Spanish Empire.

In 1571 the city of Manila was founded by Spaniards. Manila soon became a trading centre for the goods of eastern and southeastern Asia. One ship a year sailed from Acapulco, Mexico, to Manila. The way across the Pacific was long and dangerous for these ships, called Manila galleons. The Spanish captains soon learned that they would have the most favorable winds if they followed a great-circle route from Manila to the present state of California. The California coast was explored and mapped. If it had not been for the valuable trade in silks and spices with Manila, Spain might never have claimed and settled California. The state would be quite a different kind of place without this early Spanish influence.

A little more than four hundred years after the Spaniards took possession of the Philippines, the islands became a possession of the United States. On July 4, 1946, the independence of the Philippine Islands was formally declared and the Philippine Republic was established.

*People you would enjoy meeting*

Members of your class may know someone who has visited Malaya on business or for pleasure. Some Canadian soldiers, sailors

and airmen have been in southeastern Asia. If anyone in your community has been in that part of the world, ask him to tell you about his experiences.

### *Imports from southeastern Asia*

You have read about many kinds of goods brought to Canada from southeastern Asia. Make a list of these goods, with the countries from which they came. You cannot very well collect such imports for an exhibit. If you have a piece of rope made of Manila hemp, you can be almost sure the fibre came from the Philippines. Tin, sugar, rubber, coconut oil, or coconut fibre might have come from wherever they are produced.

When Japan over-ran southeastern Asia in World War II, many Canadians realized for the first time how much we depended on the rubber and tin of that region. How has the growth of Sarnia, Ontario, been affected by the need of a substitute for the rubber of southeastern Asia?

You can have another interesting kind of exhibit. Most war veterans brought curios home with them. Those who were in the lands you have been studying will be glad to let you borrow some of their curios.

## II. CAN YOU IDENTIFY THESE PLACES?

What land is described in each of the following paragraphs? One of them is not in southeastern Asia, but you know it well.

1. A sparsely populated land entirely south of the equator. Most of it is wild and uncultivated. A mountain range runs almost the entire length. In valleys among the mountains live tribes that have had almost no contact with modern civilization. They live very much as people did in the Stone Age.

2. A country that has both densely and sparsely populated regions. The government is encouraging people to move into the sparsely populated regions. Large areas are covered with dense forests. Much rice is grown, but additional supplies are imported. Sugar, hemp, and copra are produced for export. The capital of this country is one of the large cities in southeastern Asia.

3. This is one of the most densely populated countries in the world. Most of the people are subsistence farmers. Rice is



grown wherever there is enough water. In the northwestern part of the country the farmers grow wheat. Cotton is grown in a very dry region and jute in a very wet region. Much sugar is produced, but none is exported.

4. A very densely populated land. There is a mountain range in the southern part. The slopes are cultivated because they have rich volcanic soil. Sugar, tea, coffee, quinine, copra, palm oil, and kapok are produced for export. Transportation is better than in most lands of southeastern Asia.

5. A country that is not densely populated. Most of its people are farmers. They grow enough rice for themselves and also export vast quantities. One area is too dry for rice. Here beans, cotton, millet, and peanuts are grown. Goats and sheep are pastured in this region, too. Much of the land is rugged and covered with forests. One valuable forest tree is also grown on plantations. Elephants are used in handling timber.

### III. WHAT YOU CAN READ FROM PICTURES

The picture below was taken in southeastern Asia. With all you now know about geography, you should be able to read a great deal from it at a single glance.

1. How can you tell that the picture shows the slope of a wide valley?

2. What have the farmers done to secure more land for farming? Is the land intensively cultivated? Do you think the picture was taken in a densely or a sparsely populated region? Why?

3. How can you tell what crop is being grown on most of the land?

4. Where do you find banana plants and coconut palms in the picture?

5. The following sentences are taken from the pages you have just read. They describe the part of southeastern Asia where the picture was taken. What is it?

"Almost every possible acre of land has been cultivated."

"The people . . . are able to live almost entirely on products they themselves raise."

"Imagine an island about the size of the Maritimes. Now try to imagine almost four times as many people as in all Canada crowded into that island."

### IV. MAKING USE OF WHAT YOU HAVE LEARNED

Turn back to pages 48-50. Read again the sections under the headings, "Raw materials" and "World changes in farming." How does this help you to answer the questions in study guide numbers 2 and 3, page 319?

### V. SOUTHEASTERN ASIA IN THE NEWS

During World War II fighting went on in nearly every part of southeastern Asia. Plantation trees were cut down, tin smelters and oil refineries were destroyed, and sea-ports were wrecked. The people will be many years building up what has been destroyed. Watch your newspapers and magazines to learn about their progress.

Look through your newspapers for date lines that name cities in southeastern Asia. What do the articles add to your information about the cities?

*Courtesy Netherlands Information Bureau*





## *Australia and the Pacific Islands*

### LANDS OF INCREASING IMPORTANCE

The only large body of inhabited land that lies wholly south of the equator is Australia, an island so large that it is called a continent. The other lands near Australia are also islands, but most of them are small. New Zealand, to the southeast, is about one-fourth the size of Ontario. The Hawaiian Islands, far away to the northeast, cover about half as many square miles as Vancouver Island. Thousands of tiny islands are scattered about in the great Pacific.

**Australia's strange animals and plants.** Australia is far from other continents. The plants and animals of Europe, Africa, and

Asia, about which you have read, did not spread to Australia. Early European explorers were surprised to find large animals with powerful hind legs and tails and short forelegs. These animals leaped along at a speed of as much as forty miles an hour. The young were carried in a pouch on the mother's body until strong enough to jump. You guessed it! The animals that looked so strange to Europeans were kangaroos.

Other strange animals and birds make their homes in Australia. There are soft, furry koala bears that live on the leaves of the eucalyptus tree, the most valuable tree in Australian forests. There are dingoes, or



wild dogs, that break the quiet of the night by long, mournful howling, and worry shepherds by attacking and killing sheep. There are huge, drab birds called emus that cannot fly but make up for it by running swiftly across the plains. And then there is the strangest animal of all, the duck-billed platypus. It has the characteristics of an animal, a fish, and a bird. When scientists first were told about it, they would not believe there could be such an animal.

Eucalyptus trees cover the highlands of Australia. These trees shed their bark instead of their leaves. Long ribbons of old brown bark hang from the trunks, and underneath can be seen fresh, pale bark. In the jungle are ferns of all kinds and orchids too. Long vines hang like ropes from trees, and countless strange plants like those of ancient days cover the ground. Even in the dry lands there are plants. When it rains, the ground is carpeted suddenly by vegetation that seems to come from nowhere.

**Picturesque New Zealand.** New Zealand has a climate much like that of Great Britain. It does not have barren deserts and unhealthful tropical forests and grasslands like those of Australia, and so it is more densely populated. Nor does it have the strange animals that Australia has.

New Zealand does have a wealth of picturesque scenery. Valley glaciers in the high mountains and lakes and rivers teeming with fish attract visitors to the resort hotels. New Zealand has a volcanic region which is

When there is enough wind, many natives of the islands in the southwestern Pacific use sails on their dugout canoes.

*Photo by Ava Hamilton and B. Backhaus*



famous, for not many other places in the world have geysers and hot springs. Those of New Zealand remind us of Yellowstone National Park. What other regions with hot springs have you read about?

**Differences in islands.** The islands of the Pacific differ in a great many ways. Some are the tops of volcanoes that rest on the ocean bottom. Others are low coral islands that have been formed by small sea animals called *coral polyps*. Millions and millions of these tiny creatures are found in places where the ocean is warm and shallow. They secrete a limey substance with which they build a skeleton-like framework around themselves. Billions of polyps live together in huge colonies. The colonies grow bigger and bigger and higher and higher, till finally they reach the surface of the water. In this way coral islands are formed. When above water level, the coral begins to break up to form coral sand.

The differences in islands helps to explain why people use them in different ways. On volcanic islands the soil is rich, and plantation agriculture is often developed. But plantations are not usually found on the low coral islands, for the surface of the coral sand dries out very quickly after a rain. The most valuable plant on most coral islands is the coconut-palm tree, for its long roots are able to reach water far below the surface. There, as in other tropical regions you have studied, coconut palms supply not only food but material for clothing, shelter, and boats. Hundreds of the Pacific islands are only barren rocks where sea birds come to build their nests.

There are great differences in the native people of these islands. Some of the inhabitants were savage cannibals only a short time ago, and are not yet used to the ways of civilization. Others are civilized. Some of the natives are fishermen. They live

on the coast and build their homes high above the water on poles. Others live inland in villages. Their houses have roofs thatched with palm leaves or grass. The villagers grow fruit and vegetables in small gardens and hunt animals in the forest.

### **Increasing importance in world affairs.**

Once the Pacific was considered a great barrier separating North America from Asia. Today the Pacific is a highway of trade and travel connecting these continents. A few centuries ago even Australia and New Zealand were given almost no attention, and the small scattered islands in the Pacific were thought to be of little or no value except as stations for supplying food and water to an occasional sailing ship.

Gradually the more progressive nations of the world, seeking trade and markets, became interested in the Pacific islands. Today Great Britain, France, and the United States all own islands in the Pacific, and all are interested in developing trade routes across that ocean. Before World War II, Japan controlled many of the islands, and Japanese power and influence extended far beyond the mainland of Japan.

Why are so many nations interested in these widely scattered and sparsely settled islands? The answer is that when steamships began to cross the Pacific, the islands located along the sea lanes became very important

as coaling stations. With the invention of the telegraph, they were needed as cable stations. Their importance increased with the use of the radio and the airplane. Radio and cable stations, weather stations, fueling stations, and airfields are now needed along the long routes that cross the broad Pacific in nearly every direction.

**Study guides.** The following questions should help you as you read about Australia and the Pacific islands. Watch for answers as you study, and discuss them in class.

1. Australia is about two-thirds as large as Canada, but it has only about half as many people as our country. Why has it fewer people per square mile than Canada? Why is the population so unevenly distributed? (I)

2. How and why does commercial farming differ from place to place in Australia? (I)

3. What advantage does Australia have for manufacturing? What disadvantages tend to offset these advantages? (III)

4. In what ways is Australia somewhat like Canada? In what ways does it differ from Canada? (I, II)

5. What uses are made of most of the land in New Zealand? In which place do you think the early English settlers in Australia felt more at home—in Australia or in New Zealand? Why? (III)

6. What Pacific islands belong to the British Empire? How are these islands of use to Great Britain? In what ways do they differ from one another? (I, III, IV, V)

## **WHAT WE CAN READ FROM MAPS**

### **USING THE GLOBE**

1. Hold the globe so that the Hawaiian Islands are on a level with your eyes. What large body of water occupies nearly all of the part of the world that you can see?

2. Find a meridian near the eastern edge of New Zealand. What is the longitude? What is the approximate difference in longitude between the British Isles and New Zealand? What is the great-circle distance from London to New Zealand? Are the British Isles halfway around the world from New Zealand?

3. On the globe, measure the shortest distance from Vancouver, B. C., to the Philippines; to Tokyo; to Sydney, Australia. Which of these great-circle routes is nearest the Hawaiian Islands?

4. Notice that Australia lies wholly south of the equator. Does any other continent lie wholly south of the equator? Name a Canadian city that is about the same distance north of the equator as Dunedin in New Zealand is south of the equator. Is any part of Australia about the same distance from the equator as the southern tip of Canada?





A relief map of Australia.

5. As you have learned, lands that lie south of the equator have seasons just the opposite of ours. Which are the winter months in Australia? the summer months?

## LOCATING THE ISLANDS

1. Locate Australia on an outline map of the Pacific Ocean and print its name in the correct place on the map. Now turn to the physical-political map on page 32. You can see that Australia is made up of states. The island of Tasmania, to the south, is one of them. How many states are there? Add the name Tasmania to your outline map.

2. New Zealand is a separate country made up of islands. The two largest are North Island and South Island. Name the strait that separates these two islands. Print the name New Zealand on your map.

3. Your outline map may not show all the islands about which you will read in this unit, but you can place a dot for each in the approximate location and print its name as you read the following directions.

Turn to the map on page 33 and find the Solomon Islands, northeast of Australia. In what direction are they from New Guinea? Farther out in the South Pacific are the Samoa Islands. About how far are these islands from Australia?

East of the Philippines are islands which are located at almost equal distances from each other across the Pacific. They are Guam, Wake, and the Midway Islands. About how many miles apart are they? At about what latitude are the Midway Islands? Does the location suggest a possible reason for this name? Notice that the Samoa Islands lie far to the south of the Midway Islands.

South and east of the Midway Islands you can see the chain of Hawaiian Islands. What direction are they from the Tropic of Cancer? Which is nearer Vancouver, the Midway or the Hawaiian islands?

## SURFACE, CLIMATE, AND VEGETATION

1. Judging from the map on page 32, would you say that Australia is a region largely of highlands or of lowlands? Find the range of mountains in the eastern part of the country. Mount Kosciuszko, toward the south, is the highest mountain in this range. How high is it? Turn to the map on pages 10-11 and compare the height of this mountain range with that of the Appalachians.

In which eastern state of Australia are the coastal plains widest? Most of western Australia is a rather low plateau. Is the surface of the plateau even or uneven? Where are the largest areas of lowland in New Zealand?

2. Follow the coast line of Australia. It has some large indentations and peninsulas but there are only a few good harbors. Some of the best are on the southeastern coast. There you will find the city of Sydney. Though the physical-political map is too small to show it, this city has one of the best natural harbors in the world.

Find the Great Barrier Reef along the northeastern coast. A *reef* is a chain of rocks or a ridge of sand or coral in shallow water. The Great Barrier Reef is a coral reef made by coral polyps. Because of this reef, ships have difficulty in reaching Australia's northeastern coast. You see why it is called a barrier reef. For about how many miles along the coast does it extend? Since you know in what waters coral is found, can you suggest reasons why there is no such reef along the southeastern coast?

3. Australia is a continent with very few rivers. The Murray River, in the southeast, is the longest and largest. Turn to the map on page 340 and find the Murray Basin. Do you think the Murray River benefits a large or a small part of the country? In what general direction does it flow? Notice that it rises near the Pacific Ocean and empties into an arm of the Indian Ocean.

4. Which part of Australia is in the tropics? Is any part in high latitudes? Explain your answer. If you were to travel north in Australia, would you expect to find the climate growing warmer or cooler? In which part would you find the longer days in summer? the longer days in winter? How do the summer days in New Zealand compare with those in Australia? Which part of Australia has a growing season of the same length as South Island?

5. Most of Australia lies in the path of the southeast winds. By looking at the rainfall map and then at the physical-political map of Australia, you should be able to explain the heavy rainfall along the eastern coast. How does the location of the highlands help give most of the continent an unfavorable climate? New Zealand is in the belt of the westerly winds. Which side of the islands has the heavier rainfall?

6. On the vegetation map find the forest regions of Australia. What does the rainfall



map tell you about these regions? In the northeast, where the climate is hot and wet, the tropical rain forest is like that along the Congo, in Africa. Southward, along the east and west coasts of Australia, the forests are more like those of other temperate lands. Find the areas of grassland. The rainfall map shows you that grasslands are found where there is enough rain for scattered trees. Now find the desert lands. Does Africa have a desert in the same latitude? Compare the latitude of the desert of Australia with that of the Sahara.

## WHERE THE PEOPLE LIVE

1. What part of Australia has the densest population? Why do so few people live in the interior? Use any maps that are necessary to help you answer these questions.

2. About half the people of Australia live in five of the largest cities. Where in Australia would you say most of the large cities are located? Turn to the physical-political map to check your answer.

3. Which part of Australia has a population density similar to that of New Zealand?

## LIVING IN AUSTRALIA AND NEW ZEALAND

While European nations were colonizing lands in the Americas, in Asia, and in Africa, Australia was still a vast unknown land, unexplored and empty except for primitive native tribes. Being far from the routes of early trade and travel, Australia was not discovered by the European explorers until early in the seventeenth century.

The first Europeans to land in Australia were Dutch. They came from Java and sailed along the north and west coasts. Some of the sailors went ashore, but they quickly hurried on shipboard again, with unfriendly natives at their heels. The lands that the Dutch saw were hot and wet or dry and barren. They had no interest in such unfriendly places.

In 1770 James Cook took possession of the eastern coast of Australia for England. At last the best part of the continent had been found. A few years later an English settlement was established near the place where Sydney now stands. The exploration of the rest of the continent went on from this centre. Today nearly all the Australians are descendants of people from the British Isles. Australia, like Canada, India, and South Africa, is a self-governing dominion of the Commonwealth of Nations.

You have seen that some countries are crowded with people. In Egypt, India, China, Japan, and Java, millions of people toil day in and day out to make a bare living

on small patches of land. But in Australia the population is very sparse. There is little intensive farming. Most of the people live near the coasts, particularly in the southeastern part of the continent. Vast areas of land in the interior are almost empty. Much of Australia is still pioneer country.

The natives of Australia were among the most primitive peoples in the world. Some of their descendants still live in the interior of the continent under the protection of the government. A few work on cattle and sheep ranches, but most of them live on reservations where there are no white men.

New Zealand was the last British dominion to be settled. It was discovered and named by Dutch seamen in 1642. Probably the next European to visit it was Captain Cook in 1769. On his way to Australia, he landed and explored the coasts, and finally sailed on through the strait that now bears his name. Seventy years later colonists settled in New Zealand. Like their neighbors in Australia, most of the New Zealanders are of British ancestry.

## Flocks and Herds

Australia and New Zealand are commercial grazing countries. They are important sources of the world's supply of meat, hides, and dairy products, and Australia is the world's leading exporter of wool. Millions

of sheep and cattle graze the year round on broad, rolling pastures. As you read, you will find how the livestock industry differs from place to place.

### **The importance of sheep in Australia.**

If you were to visit the docks at Sydney or Melbourne, you would see huge warehouses that are used for storing wool for export. In the spring, just after the sheep are sheared, these warehouses are filled with bales of wool wrapped in burlap and stacked in long rows. Buyers examine samples carefully and make notes as to quality. They attend auction sales and buy the wool that suits their needs.

Most of the wool buyers are from England and Scotland, but usually there are some from France, Belgium, the United States, Japan, and Germany. Buyers come thousands of miles to attend auctions, for Australia is the world's largest producer of wool, and Australian wool is of very good quality. These auctions are important to the people of Australia, too. The sale of wool helps to furnish the income with which many Australians buy machinery, automobiles, gasoline, and other imported goods.

Wool is not the only export from sheep ranches. Each year Australia exports millions of pounds of mutton, chiefly to England. As soon as the sheep are slaughtered, the

mutton is frozen, wrapped in thin cloth, and loaded on refrigerator ships. The meat is kept frozen, and at the end of a long voyage it is as fresh as it was when it left Australia, even though the ship has to pass through the hot equatorial belt on the way.

**Climate and sheep.** Turn back to the map on page 71. You notice that most of Australia's sheep are found in the southeastern part of the continent, and none along the east coast. How does the rainfall map help to explain why there are no sheep in central Australia? The climate in northern Australia is so hot that sheep do not grow a thick fleece of wool. Moreover, some parts of northeastern Australia are covered with tropical forests. Even if the land were cleared, the sheep would suffer from diseases in that hot wet region.

By comparing the map on page 71 with the rainfall map, you can see that most of the sheep in Australia are raised where the rainfall is more than 10 inches a year. Sheep can live on rather dry lands, and yet the rainfall has a great influence upon the number that can be grazed. For example, if a region has only 10 inches of rainfall a year, each square mile of its pastures can supply food for only a few sheep. If, on the other hand, the rainfall is 20 inches a year,

**A large flock of sheep grazing on the broad, rolling pastures of a sheep station in New South Wales. Flocks of sheep even larger than this are not an unusual sight in some parts of Australia.**

*Courtesy Australian News and Information Bureau*





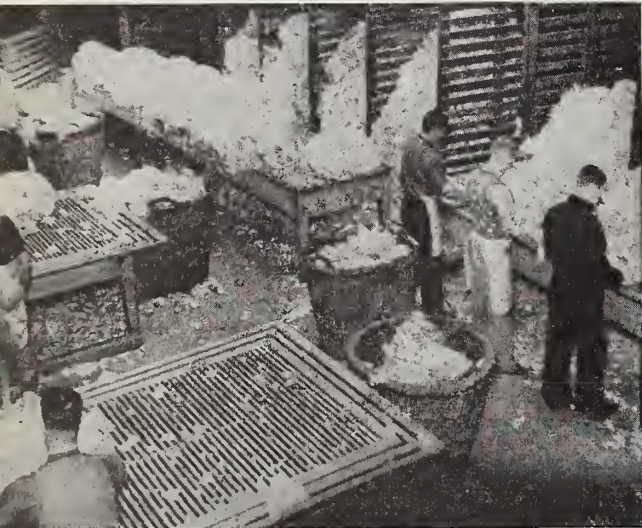


Courtesy Australian News and Information Bureau

Shepherds on horseback tend the sheep that roam over unfenced pastures in the drier parts of Australia.

These men are sorting wool according to quality. They work at the sheep stations at shearing time.

Ewing Galloway



each square mile of pasture will supply food for one hundred to two hundred sheep. You can see that it would not pay a herdsman to keep sheep on lands that have an annual rainfall of less than 10 inches.

As you learned in your study of Mediterranean Europe, the wool of merino sheep is especially fine. They yield heavy fleeces because their skin is wrinkled into long, deep

folds which furnish a large surface for wool. Since merino sheep do not provide very good meat, another kind is raised chiefly for mutton. It takes a lot of good pasture to fatten mutton sheep, and so they are raised in the moist southeast. Wool is obtained from mutton sheep, too, but it is much coarser than the wool of merino sheep.

In the rainier parts of Australia it is not difficult to get water. Dams are built across many small streams to make little reservoirs. But in the drier lands west of the mountains it is a real problem to keep a supply of water for people and animals. Many deep wells are drilled to reach underground water. In some places, pressure forces the water to the surface, where it gushes out in a steady stream. Such wells are called *artesian* wells. In other places, the water does not come to the surface. It must be pumped to the surface and into storage tanks. This water contains many minerals, and people seldom drink it or water their gardens with it. But it is suitable for livestock. Often it is distributed by ditches to distant dry creek beds to supply sheep and cattle ranches.

**Sheep stations.** A sheep *station* is a large ranch containing thousands of acres of land. In the rainier parts of Australia the stations are fenced into fields called *paddocks*. It does not pay to build fences in the drier parts, because the sheep must graze over vast areas of scanty pasture to obtain enough food. No shepherds are needed to watch the sheep in the paddocks, but in the unfenced parts they are under the constant care of shepherds. The shepherds do not go about on foot, as do those of European countries. They ride on horses, and are helped by their faithful "kelpies," or Australian sheep dogs.

The wide, spacious pastures are lonely, but the sheep station itself is like a small village. Most of the owners live on their sheep stations in large, comfortable homes. Grouped around the owner's home are the houses for the workers and stores, machine



shops, stables, and sometimes even a post office and a telegraph station. Farther out are the stock pens and long shearing sheds. Two things you would not see in Australia: barns and silos. Winters are so mild that livestock can graze outdoors the year round.

Shearing time is a busy season at a sheep station. Many expert workers arrive to shear the sheep and sort the wool. Shearing is done in late winter or early spring, chiefly in August or September. The work starts earliest in the warmer northern part of the country. The men who shear the sheep begin in the north and work their way south. A good shearer can shear more than a hundred sheep a day. The shearing is done in a big shed. The shed holds enough sheep to keep a man and several helpers busy all day.

**Too many rabbits.** Most of us do not think of rabbits as great pests. Sometimes they help themselves to the young and tender plants in our gardens, and sometimes they kill young fruit trees by eating the bark. But in our country the number of rabbits is not great. In Australia rabbits are so numerous that they have become a terrible plague. It has been estimated that there are not millions but billions of them.

When Europeans first came to Australia, there were no rabbits on the continent. Some were brought from England to provide game for sport-loving hunters. Their numbers soon increased amazingly, for in Australia they have no natural enemies, such as foxes and weasels.

It has been estimated that ten rabbits will eat the grass needed for one sheep. Entire regions have been so badly eaten over by hungry rabbits that they are useless for sheep. In a desperate attempt to keep the rabbits from spreading into western Australia, rabbit fences were built from north to south across the entire continent. The fences were made of closely woven wire. But even with thousands of miles of fences, the rabbits now overrun most of the continent. Millions are killed, frozen, and shipped to England for food. Millions of rabbitskins are exported each year. The fur is used for making felt for hats. Four rabbitskins furnish enough material for one hat.

**Cattle in the tropical grasslands.** In Australia, cattle are raised on lands that are not suitable for sheep. The climate in the northern part of the continent is warm and moist—an unhealthy place for sheep. Like the Sudan in Africa, it is a region of tropical

**The cowboy is selecting cattle from the herd to be sent to market. On the Australian range many of the cattle are wild and make frantic efforts to escape. In his haste one animal has fallen.**

*Courtesy Australian News and Information Bureau*







A map showing where cattle are raised in lands overseas.

grasslands. One season is hot and rainy, the other is mild and dry. The grass is rather coarse and tough, but it makes fairly good pasture for beef cattle. Northern Australia is sparsely settled. It is an unpleasant place in which to live.

Cattle stations, like sheep stations, cover thousands of acres and are miles and miles apart. Herds of cattle must be driven across lonely stretches of country to city markets. Sometimes cattle travel the entire distance "on the hoof." Where there is no surface water, the government has had artesian wells sunk to provide a water supply. Often cowboys drive herds to the nearest railroad station for shipment. On the map on page 32 find railroads that run from the coast into the central part of Queensland. Large numbers of cattle are shipped over these

railroads to packing plants on the coast. There the beef is chilled or frozen. Then it is shipped to Great Britain and to various tropical countries near Australia. Many cattle hides are also exported.

Sometimes there are long dry spells during the usually rainy summer. Then many cattle may perish. Often those that survive are in very poor condition. Such cattle are not slaughtered at once when they reach the rainy coastal region. They are pastured on lands near by until they are fat enough to make good beef. Some of them are shipped south, where they are fattened on good grasslands near big city markets.

**Dairy farms.** Dairy cattle are raised in the more densely populated sections where heavy rains and rich soil provide nourishing



pastures. With your finger trace the coastal areas of Queensland, New South Wales, and Victoria. The dairy industry is located in this section. The map on page 346 shows that there are many cattle in this region. The Australians use only about one-fifth of the milk produced, the rest being made into butter, cheese, and condensed milk. Large quantities of these products are exported each year. Coöperatives have been formed in Australia's dairying districts, and the largest part of the butter produced comes from coöperative factories.

**New Zealand, a land of pastures.** Much of the farm land of New Zealand is used for pastures. Millions of acres of forests have been cut and burned, and grass seed has been sown between the stumps. Why did the people want so much land in pasture? Actually, large areas in New Zealand are well suited for growing crops, but the early settlers soon found that they had difficulty in marketing grain and other cultivated crops because they were so far from England, the home market. In fact, they were far from any country that might want to buy their farm produce. New Zealand is even more out-of-the-way than Australia. It is not on any well-travelled ocean highway, and ships do not often pass near it on their way to other countries.

Today New Zealand is one of the world's leading sheep-raising countries. The people have found that they can make money by raising sheep. Wool, skins, and tallow are profitably shipped on the long journey to England. Large quantities of mutton are also exported, and New Zealand provides more than half of the world's supply of this meat. Turn to the map on page 71.

In what part of New Zealand are the greatest number of sheep raised? Explain why. Use the physical-political and rainfall maps to help you answer this question.

The largest and the most important dairy-farming districts are on the moist, rolling plains of North Island. The dairy industry was started by the first colonists in New Zealand, but dairy products were not exported in large quantities until refrigeration had been introduced. Butter can be sent long distances in refrigerated trains and ships. Soft cream cheeses are also shipped in this way, while hard, dry cheese may be stored for years before being shipped.

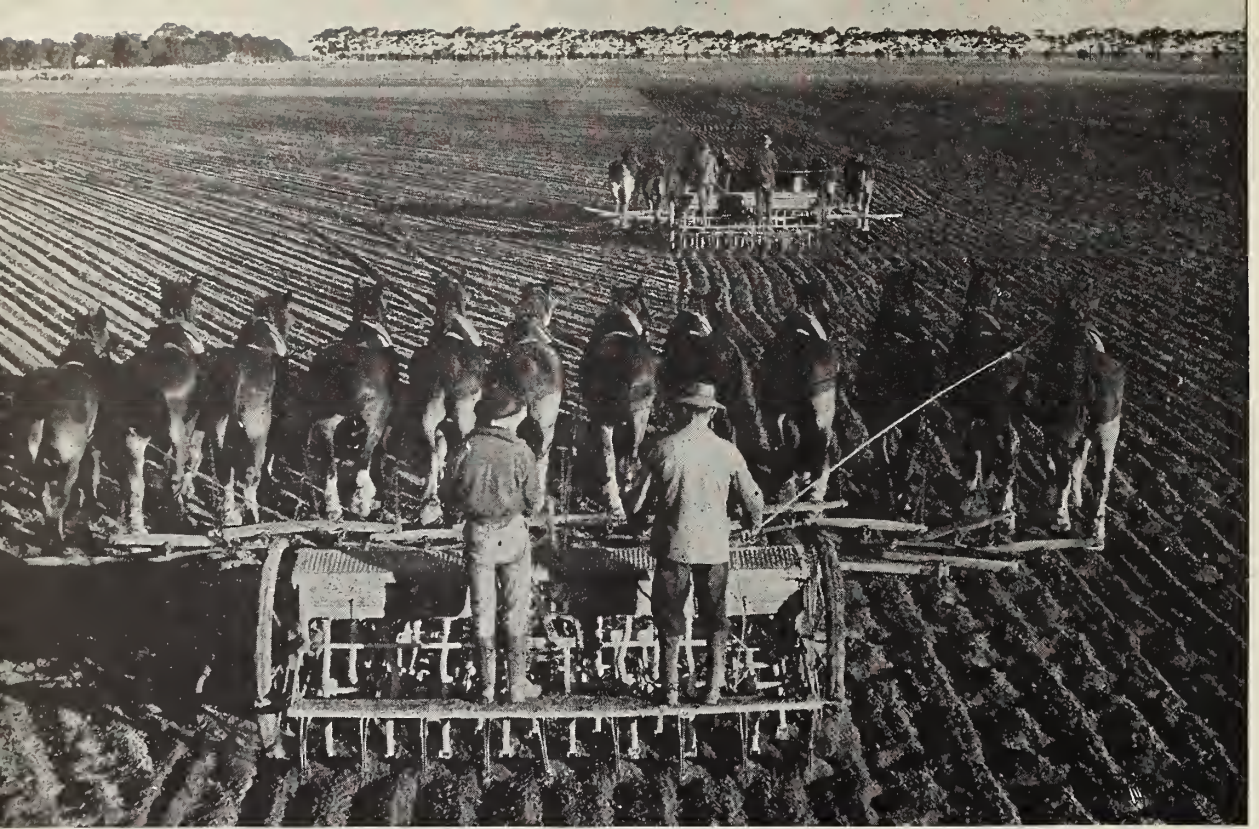
Coöperatives have been organized to market the dairy products. Such careful inspections are made that New Zealand has

**A shepherd and his dogs driving a flock of sheep to market. This is a familiar sight along New Zealand roads.**

*Courtesy of the New Zealand Legation, Washington, D. C.*







*Courtesy Australian News and Information Bureau*

**Teams of many horses are needed in sowing seed in this vast wheat field. The flatness of the land makes it easy to use horses and farm machinery for cultivating and harvesting the crop.**

earned a world-wide reputation for high quality in its dairy products. Butter and cheese factories are scattered throughout the dairying regions. In the cool of the night the butter and cheese are rushed away in motor trucks to the coast. There they are stored in refrigerated warehouses to await shipment to other countries.

## Farm Lands

Agriculture in Australia is varied. It has temperate, subtropical, and tropical types. More and more land is being cultivated, and farmers are pushing their way into what was once grazing land. Wherever the soil is good and there is enough rainfall, animals are beginning to share the land with suitable crops.

**Wheatlands.** Australia, like Canada, is one of the important wheat-producing countries of the world. More farm land is devoted

to wheat than to any other crop. Look at the map on page 76 to see where most of it is grown. Then turn to the map on pages 12-13. What is the annual rainfall in the wheat-producing region? Most of this rain comes in winter and it seldom exceeds 25 inches. As you have already learned, wheat is well suited to this type of climate. Progressive methods of farming are used. New varieties of seed have been bred, and fertilizers are used. In some places wheat is rotated with pastures used for grazing sheep. The wheat is rotated from field to field so that the soil will not lose its fertility.

This is a region of rolling plains. Large farms of almost level land make it possible for Australian farmers to use machinery of all kinds profitably. Tractors or teams of six, eight, or ten horses are used to plow the ground, and wide drills sow many rows of seed at a time. Combines cut, thresh, and clean the wheat. Trucks haul great loads of grain from the fields and to railroad stations.

With such machinery and with the aid of one helper, a farmer is able to plant and harvest as many as three hundred acres of wheat. How have Canadian farmers made use of machinery to speed up their work? Describe a modern machine used on Canadian farms.

**Sugar and fruit.** Sugar cane, another important crop of Australia, does well along the hot, wet coastlands east of the highlands. Large quantities of sugar are produced on plantations owned and operated by Australians. Unlike other tropical plantations about which you have read, natives are not hired to do the work. Everything is done by the Australians themselves. Turn back to the map on page 141 to see how far along the coast the sugar-cane area extends. Are any sugar beets raised in Australia?

Bananas and pineapples are grown in some of the rainy, tropical parts of Australia. Citrus fruits are raised along the coast of New South Wales and in the irrigated parts of the Murray Valley and western Australia. You can find these areas on the map on page 171. You have learned that several regions in different parts of the world have a Mediterranean climate. Two regions in Australia have this kind of climate. One is near Adelaide in the Murray River Valley, the other is near Perth in the southwestern corner of the continent. Many other kinds of fruits are grown in Australia. Much of the fruit is canned, some is dried, and some is made into jams, jellies, and preserves. Large quantities of these prepared fruits are exported each year.

Apples are the most important fresh-fruit export of Australia. Apples will not grow in the tropics, and they do not do well in lands that have long, hot summers. They are found in many places in Australia, but Tasmania, with its cool, moist climate is the best place for growing apples. The map shows that much of Tasmania is too rough and hilly to be easily cultivated. Yet thousands of barrels of apples are exported from

Tasmania each year. There the harvest comes at the time of our spring. The fruit is sold to countries north of the equator at a time when they are not supplied with home-grown apples.

**Farms of New Zealand.** Almost half of the people of New Zealand are farmers. Most of them are not interested in raising crops for sale, however. As you have learned, they are mainly dairy farmers. A large part of the cultivated land is used for growing grass. Pastures are not so good in winter as in summer, and so farmers raise grain and root crops such as turnips as extra feed for their animals during the winter.

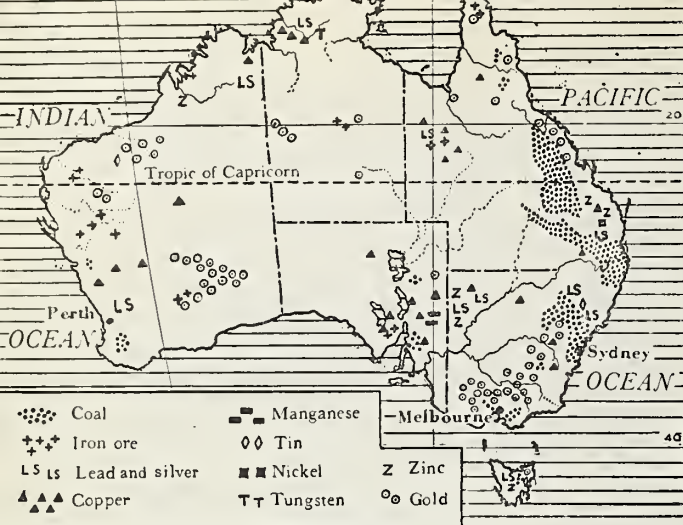
A little land is used to grow wheat, oats, and corn. In many places vegetables and fruit are raised for home markets. The best fruit-producing region is the narrow peninsula of North Island. There the climate is warm enough for grapes, oranges, and even lemons. You can easily see where this region is on the citrus-fruit map on page 171.

## Mining, Manufacturing, and Trade

The trade of Australia and New Zealand is large, for, as you have learned, their farms and ranches supply a large surplus of food and raw materials for export. Minerals are also important items in this trade, for Australia has many kinds of mines. Though manufacturing is increasing, many kinds of manufactured products are still imported. Imports are large for countries with such small populations. The people want many things that are not made in their own factories. The majority of them live in cities, the largest of which are seaports.

**The discovery of gold.** Just over a century ago, there were only 400,000 settlers in Australia. It seemed that few more would be attracted, that the country would develop no further. Then—gold was found! An Australian who had joined the California





A map showing mineral deposits in Australia.

gold rush of 1849 had gone home disappointed and discouraged. He saw some hills like those in California where gold had been found. Hopefully, he sank a shaft. There, in Australia, he found the precious metal that he had failed to find in California. Then people began to pour in. Population doubled and tripled. Many of those who came only for the purpose of seeking gold became settlers instead.

The mining of gold is still important in Australia. That precious mineral is found in each of the states, as you can see on the map on this page. At first, most of the gold

The leading gold mine at Kalgoorlie is called the "Golden Mile." It has been in operation since 1894.

*Courtesy Australian News and Information Bureau*



was mined in the southeastern part of the continent. Now western Australia has taken the lead in production. Kalgoorlie, which you can find on the physical-political map, is the centre of a huge gold field.

**Many other minerals.** Australia has no oil fields, but coal is one of its important minerals. Notice on the map on this page that most of the deposits are in the eastern part of Australia, in the region of densest population. Some deposits are good black coal, some are lignite. Deposits of the finest quality form a huge basin of which Sydney is the centre. The mines are easily worked, and large quantities of coal are used in factories and railroads and for making gas. Victoria has large deposits of lignite, much of which is used to generate electricity.

About six hundred miles west of Sydney a low ridge of rock about three miles long rises above the surrounding desert lands. In this ridge are the Broken Hill mines. On the physical-political map, page 32, you can find the town of Broken Hill. The Broken Hill mines yield ores rich in silver, lead, and zinc. Since there is no coal near by, the ores are taken south to Port Pirie or Adelaide for smelting.

You can see on the map on this page that Australia has some iron deposits, too. However, some of the largest are in the western part of the continent, far away from coal, and only the deposits in South Australia are being mined extensively. The iron ore can be transported quite easily by boat to Newcastle and other ports where smelting works have been established.

New Zealand has many different minerals, too, but mining is not so important there as in Australia. There are enough coal mines to supply local needs. At times, when the market conditions are favorable, other kinds of mines are put into operation.

**Industrial development.** For a long time, almost all Australian settlers were farmers and gold miners, and many manu-

factured articles had to be imported. Then, gradually, the people began to be less dependent upon other countries for manufactured goods, since manufacturing was being developed in Australia. Slowly various industries are being established.

As you know, there are important coal deposits along the eastern coast. In addition, the rivers can be used to provide water power. Because it is so close to good coking coal and because it has a good harbor, Newcastle has become an iron and steel centre. Factories for manufacturing iron and steel products have sprung up. The manufacture of textiles and clothing is another important industry. More than five thousand tons of wool are used each year by one of the mills. It would take a large flock to supply so much wool—a flock of more than a million sheep. Many of the factories preparing foodstuffs supply only Australian markets. Some provide products for export. Other factories include those manufacturing paper, leather goods, and rubber products.

About one-fifth of the Australians now make their living through industry. Production is small as compared with that of European industrial countries, and Australian factories still supply only a part of the needs of their own population. Except for prepared products of the farms and ranches, they produce little for export.

Only a small percentage of Australia's population makes a living through industry. In New Zealand the percentage is smaller still. As in Australia, most New Zealanders working in factories prepare meat, wool, and dairy products for export. Besides this, very little manufacturing is carried on.

**Foreign trade.** The foreign trade of Australia is large. The people produce much more wool, dairy products, wheat, flour, fruits, and meat than they need for themselves. There is usually a large surplus to send to other countries.

From the sale of the things mentioned above, the Australians get money with which

to pay for imports. The leading imports are automobiles, petroleum, textiles, electrical and other machinery, chemicals, and paper. Great Britain is Australia's best customer, but the United States, France, Japan, and Germany have also been good customers. Special attention is being given to the development of trade between Australia and the near-by Oriental countries. Foodstuffs are exported to Asia and Indonesia. They send to Australia such products as rubber, tea, petroleum, and kapok.

New Zealand's trade is much like that of Australia. Its most important exports are, as you would guess, the products of its huge flocks and herds. Wool, meat, butter and cheese, hides, and skins are shipped to other countries in large quantities. Practically all the imports are manufactured goods.

**Leading cities.** The harbor of Sydney is one of the best in the world. Its long, irregular shore line gives plenty of space for docks and wharves. Along the wharves one may see wool sheds, wheat elevators, flour mills, and warehouses for storing hides. Here ships take on cargoes of goods to be sent to all parts of the world. In other places along the wharves there are warehouses for storing articles that are brought into the country. Sydney is Australia's leading seaport, not only because it has a good harbor, but because it is a gateway to the most productive region of Australia.

Melbourne is Australia's second-largest city. It is located where a small river opens into a semicircular bay known as Port Phillip Bay. The river serves as a harbor. Small steamers can go five miles up the river to Melbourne, but larger ones dock nearer the bay. You can see that Melbourne is conveniently located as an outlet for the large wheat farms and cattle and sheep stations west of the mountains.

When ships from England come to Australia, they usually call at four ports. First they stop at Fremantle on the southwest coast, then at Adelaide, next at Melbourne,





*Courtesy Australian News and Information Bureau*

This air view of Sydney shows the modern buildings, the streets and parks of the city, and the many wharves of its fine harbor.

and last at Sydney. Trace this route on the map and estimate its length. People who travel from the western to the eastern part of Australia frequently go by boat, for the trip by rail is long and tiresome. The boat trip takes more time, but it is more comfortable. Melbourne is connected with other Austra-

lian cities by air lines. Air travel is popular in Australia, for, as you have just read, travel by train is slow and, except in densely populated sections, the service is poor.

Auckland is New Zealand's largest and northernmost city. It is built on a roomy, well-protected harbor, and its docks are equipped with modern shipping equipment. Find Auckland on the physical-political map and notice that it has railway connections with other cities of New Zealand. Use the map on page 85 to see with what places it has steamship connections.

#### MORE CITIES TO DESCRIBE

You have just read short descriptions of three cities in Australia and New Zealand. What other cities were mentioned earlier? Make sentences to describe each one. Use the Index to make sure you have found all the information about them.

## LIVING IN ISLANDS OF THE PACIFIC

Scattered across the Pacific are many small islands. Some are arranged in groups, some in chains, and some stand alone. A few have plantations and carry on trade, but most islands are unproductive. All are becoming important. You will read about their help in the development of world trade and transportation in the following pages.

### The Hawaiian Islands

More than 2400 miles from Vancouver and almost twice as far from Sydney, lies a chain of mountains built up from the bottom of the sea by volcanoes. These great peaks rising above the blue water form the Hawaiian Islands. On some of the islands the peaks

tower thousands of feet above sea level. Tropical forests and vast plantations cover their slopes. Their edges are outlined with gleaming white sand and waving palms. Volcanoes still pour out fiery lava on the largest island, making it even larger.

The Hawaiian Islands are strung out in a chain 1500 miles long. All the islands are small. The largest, Hawaii, is less than half the size of Vancouver Island. To most people, Pearl Harbor, on the island of Oahu, is the best-known spot on the islands. A few miles east of this famous harbor is the city of Honolulu. In all, there are twenty islands, but only eight are inhabited. Some are too small to be shown on most maps. Taken together, the islands are often called Hawaii.

**Citizens of the United States.** In 1898 the Hawaiian Islands were annexed to the United States as the result of an agreement between that country and the people living in the islands. The first visitors to the Hawaiian Islands found them inhabited by intelligent and active brown-skinned natives living comfortably in a land of plenty. They had many interesting customs which are preserved and practised even today. The soft tones of the ukulele and Hawaiian songs have become familiar to visitors from all over the world.

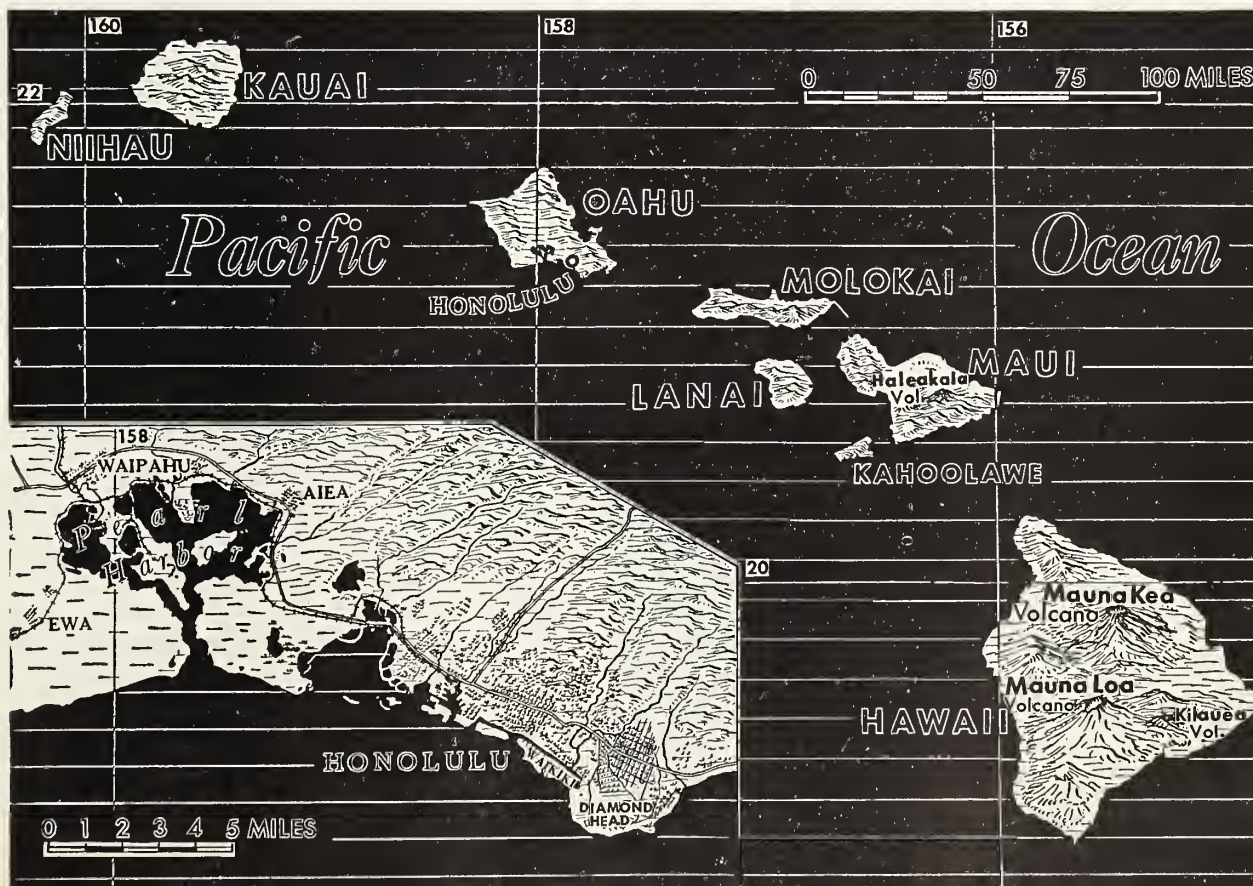
Settlers moved to Hawaii until they outnumbered the natives. The native population actually decreased, for many died from diseases which were brought to the islands from other countries. Thousands of Filipinos, Japanese, Chinese, and Europeans came to work on the plantations. Only a small part of the population is made up of people from the United States.

**Plantation agriculture.** Turn to the map on page 33 and follow the Tropic of Cancer

across the Pacific Ocean. You can see that nearly all of Hawaii lies south of this line. Although it lies in the tropics, winds from the ocean give it a very pleasant climate the year round. Hawaii lies in the path of winds from the northeast. These winds are forced to rise as they reach the mountains, and they give abundant rain to the northern side of the islands. On the other hand, the lands which lie to the south of the mountains have only a light rainfall.

The islands help to supply the people of the United States with sugar, for sugar cane is the most important crop. In the fertile soil the stalks grow big and juicy. The frost-free climate makes it unnecessary to plant the cane each year, and five or six crops may be harvested from one planting. Sugar cane is raised on both the north and south slopes of the mountains. On the northern slopes it has plenty of rain, and on the southern slopes it is raised by irrigation. Work on the plantations is done chiefly by Japanese, Chinese, and Filipinos.

**A map of the Hawaiian Islands.**







Philip Gendreau

The pineapple shoots lying on the ground will be planted and will grow through holes in the paper.

Pineapples are almost as important a product as sugar cane in Hawaii. A frost-free climate is needed to grow this fruit, but the rainfall need not be heavy. The pineapple plant looks somewhat like a cactus, with narrow, prickly leaves. Strips of heavy paper are laid over the prepared ground, and small pineapple plants are set in holes punched through the paper. This method smothers weeds and prevents the rapid loss of moisture and heat. Fields of pineapple plants cover the rolling land, giving a patchwork pattern to the landscape. Most of the pineapples are canned. These islands supply more than three-fourths of the world's entire output of canned pineapple.

**Honolulu, a modern city.** Honolulu is the capital of the Hawaiian Islands. With more than 200,000 inhabitants, a few more than Ottawa, it is by far the largest city in the islands. A few miles west of Honolulu lies Pearl Harbor, a great naval base. Look at the map on page 353 and find Pearl Harbor. Notice how well protected the harbor is, with only a narrow passageway connecting it with the sea. There in December, 1941, the Japanese air force attacked the navy of the United States. You can see on a world map why Hawaii, in the centre of the vast Pacific, is an important naval base.

## Other Islands of the Pacific

Turn back to the map on page 33 and notice the great number of islands that dot the Pacific north and east of Australia and New Zealand. You have already studied some of them as the East Indies. The islands of the Pacific range in size from New Guinea to tiny coral isles. Most of the scattered islands are dependencies of Great Britain, France, or the United States.

Many of the smaller islands are uninhabited. Many others have become important as sites for airfields and radio and cable stations. On the larger islands most of the natives live in villages near the sea, for they spend much of their time fishing. Back of the villages there are little gardens where coconuts and vegetables are grown.

**Midway and Wake—*island stepping-stones.*** On the western end of the island chain of Hawaii, about 1200 miles northwest of Honolulu, are the Midway Islands. They are covered with sand dunes and are not productive. As their name suggests, these little islands lie about halfway between San Francisco and Tokyo. They were taken over by the United States in 1867 and were used by the Pacific Mail Steamship Company as a coaling station. Later the islands were made a cable station, and in 1935 air bases were built there. The only inhabitants are the people who are employed to take care of these things.

About 1300 miles southwest of the Midway Islands is Wake Island. Wake Island, like the Midway Islands, is uninhabited except for the people who operate and take care of the airfield, a hotel for passengers, and other buildings and equipment. Neither Wake nor the Midway Islands are of volcanic origin. They are coral islands which partially enclose shallow, quiet bodies of water, called *lagoons*.

Wake and the Midway Islands are valuable as stopping places for ships and airplanes that cross the broad Pacific between the Americas and Asia. Today giant clippers

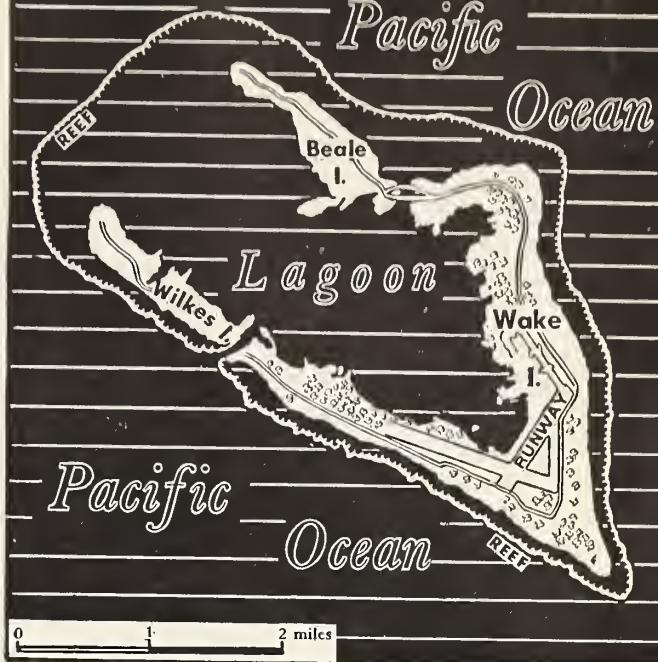
make the long journey between these continents in a very short time. However, clippers and airplanes of all kinds need stations along the way for fuel and supplies, just as ships do. Did you ever cross a stream of water by stepping from one stone to another? Ships and planes cross the broad Pacific by going from one island to another. Midway and Wake are two very important steppingstones in travel across the vast Pacific.

**The island of Guam.** About 1500 miles east of the Philippines is located the island of Guam. It is the largest of a group of islands called the Marianas, and for three centuries has been on a world trade route. Guam is of volcanic origin and is bordered by barrier reefs of coral. It has only one good harbor, but it is extremely valuable. Guam is important as a base for transportation and communication lines. The natives farm and export some copra.

**The Samoa Islands.** Turn back to the map of the Pacific Ocean and find the Samoa Islands. This group is made up of fourteen islands, divided into Eastern and Western Samoa. New Zealand acts as trustee for the United Nations in Western Samoa. Eastern Samoa belongs to the United States. The Samoa Islands are important mainly because they are on the ocean highway between Australia and the Pacific coast of North America.

Although many white planters and traders live there, most of the inhabitants of the Samoa Islands are intelligent and friendly natives. Their wants are few and simple, and coconut palms supply almost all the things they need. The coconut palms also give them their chief export, copra.

Perhaps you have read *Treasure Island* or some other book by Robert Louis Stevenson. Before his death, Stevenson spent many years among the Samoans. Many of the people there still remember him as the best friend they ever had.



A map of Wake Island.

**The Fiji Islands.** North of New Zealand and half way between it and the equator are 250 islands known as the Fiji Islands. Find these islands on the map on page 32. How far around the world are they from Britain? What time would it be in the Fiji Islands when it is noon in Greenwich, England? A good encyclopedia will tell you many interesting things about these islands and the people who live there.

**Pan American Airways base on Wake Island.** You can see the lagoon and coral reef beyond it.

*Courtesy Pan American Airways*





**The Solomon Islands.** This double row of hot, steamy islands is about 1000 miles northeast of Australia. Turn to the map on page 32 to see what sea separates them from Australia. These islands belong to Great Britain. World War II turned our interest toward them. The Solomons are a good example of the way the war has brought little-known places of the earth into sudden contact with modern civilization. Naval engagements were fought off the shores of the Solomons, and important land battles were fought on some islands in this group, especially on Guadalcanal and Bougainville.

**World civilization.** You have seen that western civilization has been carried to the four corners of the earth. The people of backward regions are no longer content with having only the bare necessities of life. Ideas of better ways of living and making a living are being spread by means of radio, airplane, motion pictures, and armies. Trade and travel are being encouraged by the building of better roads and by the use of more ships and airplanes. People of far-away places are affected more and more by world affairs. There are no longer any out-of-the-way places. Even the tiniest islands are becoming the crossroads of world routes.

## THE GEOGRAPHY WORKSHOP

Imagine that you are going to fly from your home to Australia. Your trip will be nonstop by a great-circle route. What part of Australia is the nearest to your home? In which direction will you start? How far is it from your home to Australia? What other parts of the world are at about the same distance? If you were to beam a radio broadcast from your home to Australia, in which direction would you send it?

### I. THE WORLD

#### IN YOUR OWN COMMUNITY

Australia and Canada have many things in common. In the first place, we are both British Dominions. Many of our people came originally from the Mother Country and still love it very dearly. But both our countries are new lands with vast areas still to be developed, and so our people must keep the spirit of adventure that led our early settlers to seek new homes abroad. In the second place, both our countries have considerable length of coast facing into the Pacific Ocean and so are powers to be reckoned with in that part of the world. Because of our location, we have similar relations with a number of countries like Japan, China, Indonesia, and Malaya, which lie in the Pacific.

But there are differences as well. Almost all Australians and New Zealanders either came from Britain or are descended from people who came from there. Canada is less

than half British (49.68%), since there are many other peoples as well. The French make up nearly a third of the Canadian population (30.27%), and there are also many Germans, Ukrainians, Dutch, Poles, and Jews. Thus Canada has a more varied population. Sometimes this raises problems unknown in the Dominions "down under"; sometimes it creates great opportunities.

Since World War II, however, Australia has been bringing in white immigrants at a rapid rate. Many of these immigrants come from non-British countries, and Australia's population is becoming more varied. In this way it may soon become more like Canada's.

Both Canada and Australia are big and rich countries. Turn up the tables on page 369 and see which is the bigger. Which has the larger population? Canada has more people for its size than Australia has. Why? Look at the map on page 10. Both have about equal areas of lowland, but most of Canada's lowland is too cold for use, and most of Australia's is too dry. Both countries are limited by their climates.

How do the two countries differ in their opportunities for trade and industry? What is the nearest country to Australia? What kind of people live there? Australia is far away from Europe and the Americas. What country is Canada's nearest neighbor? How many people live there? In Australia, the Murray-Darling plain is cut

off from the rest of the country. What ocean does it slope to? In Canada, the St. Lawrence Lowlands are close to the United States and slope to the Atlantic, which is the busiest ocean in the world. Canada and Australia work together, having many things to exchange. Australia can sell us fruits and hardwood lumber and wool. We can sell Australia furs and softwood timber, automobiles and machinery.

### *People you would like to meet*

During the war, Canadian and Australian airmen trained together in the Commonwealth Air Training Plan, and we also got to know many New Zealanders. Perhaps one of their training camps was near your home.

You can probably find someone who has known Australia well to talk to your class. Have you noticed that people are likely to tell the unusual things about a country? Of course you will want to hear about kangaroos and koalas, about Christmas in summer and the winter sun in the northern sky. Let the strange animals remind you that Australia is cut off from the rest of the world by water. Let the reversed seasons and the position of the sun remind you that Australia is south of the equator.

Your guests will tell you that Australians do not pronounce all words just as they are pronounced in Canada. For example, they call their country ôs-tril' yâ. All languages spoken over large areas have differences. Australians speak of cattle stations; we speak of cattle ranches. This is interesting, but not nearly so interesting as the fact that you could travel to the other side of the earth and talk with the people as soon as you landed. When you ask your guests questions, ask how Australia is like Canada. Ask about cities, houses, work, travel, and schools. Ask them what people wear, what they talk about, and what they enjoy doing.

### *Regions that can be compared with your home*

You know that British Columbia is separated from the other provinces of Canada by many high mountains that are difficult to cross. Western Australia, too, is cut off from the rest of Australia. Why is it so difficult to travel by land from Western Australia to the more thickly populated regions around Melbourne and Sydney?

Compare the climate of Northern Australia with that in your own community. How

do you suppose the houses in the northern part of Australia differ from the one in which you live? How would the clothes worn in Northern Australia differ from those that you and your classmates wear? In what part of Australia would the houses and clothing be most like those around your own home?

Find a large map of New Zealand like the one in *Goode's School Atlas*. Examine the irregular coastline of south-western New Zealand. How does this coastline resemble that of British Columbia? Why are there no great harbors along this coast of New Zealand?

On a globe, study the location of Australia and New Zealand in the large oceans of the southern hemisphere. Then note Canada's geographical position among the great nations of the northern hemisphere. Australia and New Zealand seem to be farther away from the centre of great world events than is Canada. Still Australia and New Zealand are extremely interested in world affairs. Can you explain why the people of these southern countries are so concerned with what is happening in the northern hemisphere?

By this time you have probably found that some members of the class like making maps, while others do not enjoy it. Here is an activity that will interest the map makers.

Find all the maps in this book that show ways in which your own region and Australia or New Zealand are alike. For example, you may live in a corn-growing region. Find the map on page 157 that shows a corn-growing region in Australia. Every rainfall region in Canada you will find represented in Australia. Mark the place of each map in your book with a slip of paper. Get as many volunteer map makers as you have slips. Decide which map each one is to take.

Each map maker will need an outline map of Australia and New Zealand. You can trace it from the map on page 375. Now suppose you are to make a rainfall map. Perhaps your home region has 40-60 inches of rain in a year. Color the parts of Australia and New Zealand that have 40-60 inches. Do not color anything else on the map. If you are making a corn-growing map, color just the corn region of Australia. When you have finished your map, tell what it shows. Print in large letters. Place your maps on the bulletin board.



Study guides 1 and 4 on page 339 ask for some comparisons between Australia and Canada. Using the maps you have just made, try to answer the questions in the study guides. The maps will give you many clues. For example, you may live in a region with less than 10 inches of rain. Your region probably does not have a very dense population in that case. In Canada the very dry region is small compared with the whole country. How is it in Australia?

### *What we get from Australia and the Pacific islands*

If you were to visit Australia or New Zealand, you would see Canadian automobiles and trucks on the roads, Canadian machines on farms and in factories. At the movies you might see an American picture.

Most of our imports from Australia and New Zealand are raw materials. Go to a store that sells woollen material and ask for samples of cloth made of Australian and New Zealand wool. Our country has many sheep, but they do not produce all the kinds of wool we need. We have to import quantities. You might be able to find felt made of Australian rabbit fur, or shoes made of kangaroo hide.

You can find something from the Hawaiian Islands on the shelf of almost any grocery store. Nearly all the canned pineapple and pineapple juice comes from there. We get coconut oil, coconut fibre, and sugar from some of the islands, too.

## II. PICTURES TO SORT

Imagine you have the pictures described in column two. As far as you can tell, how many might have been taken either in this country or in Australia?

1. Cowboys driving a great herd of cattle across a dusty plain.

2. A seaport city with tall buildings, busy streets, and warehouses along the wharves.

3. A field of wheat.

4. Lumbermen working in a forest of eucalyptus trees.

5. Combines at work in a wheat field.

## III. PROBLEMS TO DISCUSS

1. Australia has coal. It has wool, hides, metals, and other raw materials. What more does it need to become an industrialized country? Think about the density of population and the distance to its neighbors.

2. By using latitude and longitude, prove that New Zealand is almost exactly halfway around the world from the British Isles.

## IV. PACIFIC LANDS IN THE NEWS

Watch your papers especially for news about flights and air routes across the Pacific. See whether they mention any of the places you have studied.

You will often find news about Australia and New Zealand. Can you understand it better because you know something about the climate and products of these countries?

## V. SUPPOSE YOU LIVED HERE

The picture on this page was taken on one of the Solomon Islands. Suppose you lived in one of the houses in the village. Almost everything you need comes from what you can see in the picture.

You have learned that people everywhere need food, shelter, and clothing. What two sources of food do you have close to your house? Shelter means houses. From what do you need to be sheltered in the Solomons? Your father and mother made the house you live in. The house is built on posts. Why? The walls are of woven matting, and the roof is thatched. Where did your parents get the materials for the house?

You do not need many clothes in the Solomons. Why? For the few clothes you wear, your mother gets cotton cloth from a trader. Your father needs a knife or a few steel fishhooks. What does he sell to pay for such things?

Photo by Ara Hamilton and B. Backhaus



# Index and Pronouncing Vocabulary

A star (\*) indicates a picture.

Key to pronunciation: ā, as in *āte*; â, as in *senāte*; â, as in *cāre*; ă, as in *ăm*; ǎ, as in *fină*; ä, as in *ărm*; ȃ, as in *ăsk*; ȃ, as in *sofȃ*; ȃ, as in *ȃve*; ċ, as in *erċate*; ċ, as in *ċnd*; ċ, as in *novċl*; ċ, as in *cindċr*; ĵ, as in *ice*; Ŀ, as in *Ĵll*; ō, as in *ōld*; ō, as in *ōbey*; ō, as in *lōrd*; ō, as in *ōdd*; ō, as in *cōnnect*; ōō, as in *fōōd*; ōō, as in *fōōt*; ou, as in *thou*; ū, as in *pūre*; ū, as in *ūnite*; ū, as in *ūrn*; ū, as in *stūdy*; ū, as in *circū*; ū, like *ng*, for *n* before the sound of *k* or hard *g*, as in *ban**k*; ̃ indicates the nasal tone, as in French, of the preceding vowel; *g*, as in *go*; *th*, as in *that*; *κ*, as in German *ich*.

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## BOOKS FOR GENERAL REFERENCE

The following books will give further information about the peoples, places, industries, and products of the lands overseas: *Book of Knowledge* (Grolier Society, Inc.); *Compton's Pictured Encyclopedia* (F. E. Compton and Co.); *Lands and Peoples* (Grolier Society, Inc.); *World Book Encyclopedia* (The Quarrie Corporation).

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# Reference Tables\*

## Area and Population of the Continents Except Antarctica

|               | AREA IN<br>SQUARE<br>MILES | POPULATION    |
|---------------|----------------------------|---------------|
| Africa.....   | 11,600,000                 | 198,000,000   |
| Asia.....     | 16,793,000                 | 1,314,000,000 |
| Australia.... | 2,974,581                  | 8,241,593     |
| Europe.....   | 3,762,000                  | 533,000,000   |
| North         |                            |               |
| America..     | 9,375,000                  | 213,000,000   |
| South         |                            |               |
| America..     | 6,846,000                  | 108,000,000   |

## Area and Population of the Principal Countries of the World

### EUROPE

|                |           |             |
|----------------|-----------|-------------|
| Albania.....   | 11,100    | 1,186,000   |
| Austria.....   | 32,375    | 6,906,000   |
| Belgium.....   | 11,779    | 8,639,000   |
| Bulgaria.....  | 42,796    | 7,160,000   |
| Czecho-        |           |             |
| slovakia....   | 49,354    | 12,463,000  |
| Denmark.....   | 16,576    | 4,271,000   |
| Finland.....   | 130,119   | 4,012,000   |
| France.....    | 213,009   | 41,900,000  |
| Germany.....   | 137,418   | 69,182,181  |
| Greece.....    | 51,182    | 7,960,000   |
| Hungary.....   | 35,912    | 9,224,000   |
| Iceland.....   | 39,698    | 143,000     |
| Ireland.....   | 27,137    | 3,006,000   |
| Italy.....     | 116,224   | 46,272,000  |
| Luxembourg..   | 998       | 297,000     |
| Netherlands..  | 13,025    | 10,114,000  |
| Norway.....    | 125,182   | 3,265,000   |
| Poland.....    | 120,359   | 24,977,000  |
| Portugal.....  | 35,414    | 8,490,000   |
| Romania.....   | 91,700    | 16,007,000  |
| Soviet Union   |           |             |
| (in Europe     |           |             |
| and Asia)..    | 8,436,000 | 193,500,000 |
| Spain.....     | 194,232   | 28,514,874  |
| Sweden.....    | 173,423   | 7,017,000   |
| Switzerland... | 15,944    | 4,700,297   |
| Turkey in      |           |             |
| Europe.....    | 9,068     | 1,626,229   |
| United King-   |           |             |
| dom.....       | 94,278    | 50,616,000  |
| England....    | 50,874    | 40,386,800  |
| Northern       |           |             |
| Ireland..      | 5,460     | 1,359,798   |
| Scotland...    | 30,405    | 5,169,217   |
| Wales.....     | 7,466     | 2,552,200   |
| Yugoslavia...  | 99,181    | 16,250,000  |

### ASIA

|               |         |            |
|---------------|---------|------------|
| Aden.....     | 115,080 | 680,867    |
| Afghanistan.. | 245,000 | 12,000,000 |

|                | SQ. MILES | POP.        |
|----------------|-----------|-------------|
| British        |           |             |
| N. Bornco..    | 29,386    | 345,000     |
| Burma.....     | 261,610   | 18,304,000  |
| Ceylon.....    | 25,332    | 7,550,000   |
| China.....     | 3,850,000 | 463,493,000 |
| Formosa...     | 13,885    | 6,384,019   |
| Manchuria..    | 503,144   | 37,461,358  |
| India.....     | 1,221,880 | 356,891,624 |
| Indochina....  | 272,355   | 27,460,000  |
| Indonesia....  | 575,893   | 79,260,000  |
| Java and       |           |             |
| Madoera..      | 51,032    | 50,000,000  |
| Sumatra...     | 164,198   | 10,000,000  |
| Iran.....      | 629,343   | 18,387,000  |
| Iraq.....      | 168,243   | 5,100,000   |
| Israel.....    | 7,951     | 1,250,000   |
| Japan.....     | 142,266   | 83,199,637  |
| Jordan.....    | 37,978    | 1,686,365   |
| Korea.....     | 85,226    | 25,120,174  |
| Lebanon.....   | 3,927     | 1,238,000   |
| Malaya.....    | 50,598    | 5,082,000   |
| Mongolia....   | 558,054   | 880,000     |
| Nepal.....     | 54,000    | 6,910,000   |
| New Guinea..   | 159,375   | 1,000,000   |
| Oman.....      | 82,000    | 500,000     |
| Pakistan.....  | 365,907   | 75,687,000  |
| Philippines... | 115,600   | 19,557,000  |
| Saudi Arabia.. | 413,792   | 5,500,000   |
| Siam           |           |             |
| (Thailand)..   | 198,271   | 18,313,000  |
| Soviet Union   |           |             |
| (See under     |           |             |
| Europe)        |           |             |
| Syria.....     | 66,063    | 3,227,000   |
| Turkey in Asia | 287,117   | 19,308,441  |

### AFRICA

|                 |           |            |
|-----------------|-----------|------------|
| Algeria.....    | 851,312   | 8,764,000  |
| Anglo-Egypt-    |           |            |
| ian Sudan..     | 967,500   | 8,309,663  |
| Angola.....     | 481,351   | 4,597,000  |
| Belgian Congo   | 925,907   | 15,172,000 |
| British Somali- |           |            |
| land.....       | 68,000    | 500,000    |
| Cameroons...    | 166,795   | 3,009,185  |
| Egypt.....      | 386,000   | 20,439,000 |
| Ethiopia.....   | 409,266   | 10,000,000 |
| French Equa-    |           |            |
| torial Africa   | 965,250   | 4,347,000  |
| French          |           |            |
| Somaliland..    | 8,378     | 56,000     |
| French West     |           |            |
| Africa.....     | 1,805,288 | 16,535,300 |
| Gambia.....     | 4,068     | 270,000    |
| Gold Coast...   | 91,843    | 4,127,000  |
| Kenya.....      | 224,960   | 5,454,000  |
| Liberia.....    | 43,000    | 1,648,000  |
| Madagascar..    | 228,571   | 4,396,000  |
| Morocco (Fr.)   | 161,639   | 8,617,387  |
| Morocco (Sp.)   | 7,589     | 1,160,000  |
| Mozambique...   | 297,731   | 5,733,000  |
| Nigeria.....    | 372,674   | 25,000,000 |
| Northern        |           |            |
| Rhodesia...     | 284,745   | 1,866,000  |
| Nyasaland....   | 47,949    | 2,458,800  |
| Sierra Leone..  | 27,924    | 1,860,000  |

|               | SQ. MILES | POP.       |
|---------------|-----------|------------|
| Southern      |           |            |
| Rhodesia...   | 150,327   | 2,095,000  |
| Southwest     |           |            |
| Africa.....   | 317,725   | 374,000    |
| Tanganyika... | 342,706   | 7,514,000  |
| Tangier.....  | 147       | 150,000    |
| Tunisia.....  | 64,633    | 3,416,000  |
| Uganda.....   | 93,981    | 5,050,000  |
| Union of      |           |            |
| South Africa  | 472,494   | 12,320,000 |

### AUSTRALIA AND NEW ZEALAND

|               |           |           |
|---------------|-----------|-----------|
| Australia.... | 2,974,581 | 8,241,593 |
| Tasmania...   | 26,215    | 282,314   |
| New Zealand.. | 103,416   | 1,920,000 |

### NORTH AMERICA

|                |           |             |
|----------------|-----------|-------------|
| Alaska.....    | 586,400   | 128,643     |
| Canada.....    | 3,845,144 | 14,009,429  |
| Central        |           |             |
| America...     | 229,212   | 8,953,206   |
| Greenland....  | 839,999   | 23,000      |
| Mexico.....    | 760,373   | 25,581,250  |
| United States. | 3,022,387 | 150,697,361 |
| West Indies... | 91,625    | 16,296,220  |

### SOUTH AMERICA

|                |           |            |
|----------------|-----------|------------|
| Argentina....  | 1,074,209 | 17,193,000 |
| Bolivia.....   | 412,777   | 3,990,000  |
| Brazil.....    | 3,286,111 | 52,645,479 |
| British Guiana | 82,997    | 414,000    |
| Chile.....     | 286,396   | 5,842,000  |
| Colombia....   | 439,828   | 11,260,000 |
| Ecuador.....   | 100,613   | 3,076,933  |
| Falkland Is..  | 4,618     | 2,239      |
| French Guiana  | 35,135    | 28,537     |
| Paraguay....   | 157,047   | 1,405,627  |
| Peru.....      | 482,258   | 8,405,000  |
| Surinam.....   | 55,143    | 219,000    |
| Uruguay.....   | 72,172    | 2,353,000  |
| Venezuela....  | 352,143   | 4,986,000  |

## Area† and Population of Canadian Provinces and Territories

|               |           |           |
|---------------|-----------|-----------|
| Newfoundland  | 42,734    | 361,416   |
| P.E.I.....    | 2,184     | 98,429    |
| Nova Scotia.. | 21,428    | 642,584   |
| New Brunswick | 28,000    | 515,697   |
| Quebec.....   | 703,653   | 4,055,681 |
| Ontario.....  | 407,262   | 4,597,542 |
| Manitoba....  | 251,832   | 776,541   |
| Saskatchewan. | 251,700   | 831,728   |
| Alberta.....  | 255,285   | 939,501   |
| B.C.....      | 355,855   | 1,165,210 |
| Yukon.....    | 207,076   | 9,096     |
| N.W. Terri-   |           |           |
| tories.....   | 1,309,682 | 16,004    |

\*Latest available figures used.

†Areas are for land surface only.



## Important Cities of Europe\*

In listing foreign city names in these tables the established policy of the various news-gathering associations has been followed; i.e., certain names have been Anglicized if magazines and newspapers consistently use the Anglicized form. Otherwise local or native spellings have been listed.

|                                   | POP.      |
|-----------------------------------|-----------|
| Amsterdam, Netherlands.....       | 813,984   |
| Antwerp, Belgium.....             | 262,037   |
| Arkhangelsk, Soviet Union.....    | 281,091   |
| Astrakhan, Soviet Union.....      | 253,655   |
| *Athens, Greece.....              | 481,225   |
| Baku, Soviet Union.....           | 809,347   |
| Barcelona, Spain.....             | 1,133,345 |
| *Belfast, Northern Ireland.....   | 454,340   |
| *Belgrade, Yugoslavia.....        | 388,246   |
| Bergen, Norway.....               | 110,424   |
| *Berlin, Germany.....             | 3,321,700 |
| *Bern, Switzerland.....           | 145,740   |
| Birmingham, England.....          | 1,107,200 |
| Bordeaux, France.....             | 253,751   |
| Breslau, Poland.....              | 302,312   |
| Brno, Czechoslovakia.....         | 273,127   |
| *Brussels, Belgium.....           | 186,286   |
| *Bucharest, Romania.....          | 1,041,807 |
| *Budapest, Hungary.....           | 1,058,288 |
| Cardiff, Wales.....               | 243,500   |
| Chemnitz, Germany.....            | 250,188   |
| Cologne, Germany.....             | 594,571   |
| Constanta, Romania.....           | 78,586    |
| *Copenhagen, Denmark.....         | 767,808   |
| Danzig, Poland.....               | 175,986   |
| Dnepropetrovsk, Soviet Union..... | 500,662   |
| Dortmund, Germany.....            | 504,815   |
| Dresden, Germany.....             | 467,966   |
| *Dublin, Ireland.....             | 506,051   |
| Duisburg-Hamborn, Germany.....    | 409,733   |
| Dusseldorf, Germany.....          | 498,347   |
| Edinburgh, Scotland.....          | 488,331   |
| Essen, Germany.....               | 605,125   |
| Florence, Italy.....              | 382,083   |
| Frankfurt-am-Main, Germany.....   | 532,037   |
| Galati, Romania.....              | 80,411    |
| Gand, Belgium.....                | 166,577   |
| Geneva, Switzerland.....          | 144,422   |
| Genoa, Italy.....                 | 673,162   |
| Glasgow, Scotland.....            | 1,106,072 |
| Gorki, Soviet Union.....          | 644,116   |
| Göteborg, Sweden.....             | 349,145   |
| Graz, Austria.....                | 219,974   |
| Hamburg, Germany.....             | 1,604,600 |
| *Helsinki, Finland.....           | 359,813   |
| Hull, England.....                | 296,600   |
| Istanbul, Turkey.....             | 1,000,022 |
| Kharkov, Soviet Union.....        | 833,432   |
| Kiev, Soviet Union.....           | 846,293   |
| Königsberg, Soviet Union.....     | 372,164   |
| Kraków, Poland.....               | 307,392   |
| Kuibishev, Soviet Union.....      | 390,267   |
| Lcds, England.....                | 505,400   |
| Le Havre, France.....             | 106,934   |
| Leipzig, Germany.....             | 607,655   |
| Leningrad, Soviet Union.....      | 3,191,304 |
| Liège, Belgium.....               | 156,197   |
| Lille, France.....                | 188,871   |
| *Lisbon, Portugal.....            | 709,179   |

|                                   | POP.      |
|-----------------------------------|-----------|
| Liverpool, England.....           | 802,000   |
| Lódz, Poland.....                 | 600,608   |
| *London, England.....             | 3,389,850 |
| London, Greater, England.....     | 8,390,941 |
| *Luxembourg, Luxembourg.....      | 61,996    |
| Lvov, Soviet Union.....           | 318,200   |
| Lyon, France.....                 | 460,748   |
| *Madrid, Spain.....               | 1,187,142 |
| Magdeburg, Germany.....           | 236,326   |
| Manchester, England.....          | 700,700   |
| Marseille, France.....            | 636,264   |
| Milan, Italy.....                 | 1,286,812 |
| *Moscow, Soviet Union.....        | 4,137,018 |
| Munich, Germany.....              | 831,017   |
| Naples, Italy.....                | 1,021,023 |
| Newcastle-upon-Tyne, England..... | 295,240   |
| Odessa, Soviet Union.....         | 604,223   |
| *Oslo, Norway.....                | 417,238   |
| *Paris, France.....               | 2,725,374 |
| Peiraievs, Greece.....            | 205,404   |
| Pízen, Czechoslovakia.....        | 120,753   |
| Pórtó, Portugal.....              | 262,309   |
| *Prague, Czechoslovakia.....      | 922,284   |
| Reims, France.....                | 110,749   |
| *Reykjavik, Iceland.....          | 53,384    |
| Riga, Soviet Union.....           | 385,063   |
| *Rome, Italy.....                 | 1,649,684 |
| Rostov, Soviet Union.....         | 510,253   |
| Rotterdam, Netherlands.....       | 653,078   |
| Saratov, Soviet Union.....        | 375,860   |
| Sevilla, Spain.....               | 382,013   |
| Sheffield, England.....           | 513,800   |
| *Sofia, Bulgaria.....             | 366,925   |
| Stalino, Soviet Union.....        | 462,395   |
| Stalingrad, Soviet Union.....     | 445,476   |
| Stettin, Poland.....              | 175,043   |
| *Stockholm, Sweden.....           | 733,615   |
| Stoke-on-Trent, England.....      | 274,500   |
| Sverdlovsk, Soviet Union.....     | 425,544   |
| *The Hague, Netherlands.....      | 542,078   |
| Thessaloniké, Greece.....         | 226,147   |
| *Trieste, Trieste Free Ter.....   | 280,000   |
| Turin, Italy.....                 | 726,618   |
| Valencia, Spain.....              | 562,967   |
| Venice, Italy.....                | 318,538   |
| *Vienna, Austria.....             | 1,731,557 |
| *Warsaw, Poland.....              | 606,778   |

## Important Cities of Asia

|                       |           |
|-----------------------|-----------|
| *Ankara, Turkey.....  | 286,781   |
| *Baghdad, Iraq.....   | 500,000   |
| *Bangkok, Siam.....   | 830,000   |
| Bombay, India.....    | 1,489,883 |
| Calcutta, India.....  | 2,108,891 |
| Canton, China.....    | 1,413,460 |
| Changchun, China..... | 554,202   |
| Changsha, China.....  | 606,972   |
| Chengtu, China.....   | 440,988   |
| Chungking, China..... | 985,673   |
| *Colombo, Ceylon..... | 355,374   |
| Dairen, China.....    | 543,690   |
| *Damascus, Syria..... | 330,000   |
| Delhi, India.....     | 521,849   |
| Hangchow, China.....  | 485,042   |
| Hankow, China.....    | 749,952   |
| Hanyang, China.....   | 400,000   |
| Harbin, China.....    | 760,000   |

|                                | POP.      |
|--------------------------------|-----------|
| Hyderabad, India.....          | 739,159   |
| Izmir, Turkey.....             | 230,508   |
| *Jakarta, Indonesia.....       | 900,000   |
| *Jerusalem, Israel.....        | 164,440   |
| *Kabul, Afghanistan.....       | 206,208   |
| *Karachi, Pakistan.....        | 1,005,000 |
| Kobe, Japan.....               | 765,435   |
| Kyoto, Japan.....              | 1,101,854 |
| Lahore, Pakistan.....          | 849,000   |
| Lanchow, China.....            | 156,468   |
| Madras, India.....             | 777,481   |
| *Manila, Philippine I.....     | 983,906   |
| *Mecca, Saudi Arabia.....      | 90,000    |
| Mosul, Iraq.....               | 109,000   |
| Mukden, China.....             | 1,120,918 |
| Nagasaki, Japan.....           | 241,805   |
| Nagoya, Japan.....             | 1,030,635 |
| Nanking, China.....            | 1,118,734 |
| *New Delhi, India.....         | 93,733    |
| Novosibirsk, Soviet Union..... | 405,589   |
| Omsk, Soviet Union.....        | 280,716   |
| Osaka, Japan.....              | 1,956,136 |
| *Peking, China.....            | 1,603,324 |
| *Rangoon, Burma.....           | 600,000   |
| Saigon, Indochina.....         | 492,200   |
| *Seoul, Korea.....             | 1,141,766 |
| Samarkand, Soviet Union.....   | 134,346   |
| Shanghai, China.....           | 4,300,630 |
| Sian, China.....               | 628,449   |
| *Singapore, Singapore.....     | 550,000   |
| Sverdlovsk, Soviet Union.....  | 425,544   |
| Tbilisi, Soviet Union.....     | 519,175   |
| *Tehran, Iran.....             | 540,084   |
| Tientsin, China.....           | 1,686,543 |
| *Tokyo, Japan.....             | 5,385,071 |
| *Victoria, Hong Kong.....      | 767,000   |
| Wuchang, China.....            | 174,367   |
| Wuhsien, China.....            | 260,000   |
| Yokohama, Japan.....           | 951,189   |
| Yungkia, China.....            | 631,276   |

## Important Cities of Africa

|  |           |
|--|-----------|
| *Addis Ababa, Ethiopia.....              | 129,000   |
| Alexandria, Egypt.....                   | 928,237   |
| *Algiers, Algeria.....                   | 264,232   |
| *Cairo, Egypt.....                       | 2,100,486 |
| Capetown, Union of South Africa.....     | 383,891   |
| *Dakar, French West Africa.....          | 132,000   |
| Durban, Union of South Africa.....       | 338,817   |
| Ibadan, Nigeria.....                     | 318,000   |
| Johannesburg, Union of South Africa..... | 603,470   |
| *Khartoum, Anglo-Egyptian Sudan.....     | 75,000    |
| *Lagos, Nigeria.....                     | 167,000   |
| *Lourenco Marques, Mozambique.....       | 70,000    |
| *Luanda, Angola.....                     | 137,139   |
| Marrakech, Morocco.....                  | 238,237   |
| *Nairobi, Kenya.....                     | 136,500   |
| Port Said, Egypt.....                    | 178,432   |
| *Pretoria, Union of South Africa.....    | 167,649   |
| *Tananarive, Madagascar.....             | 174,200   |
| *Tangier, Tangier.....                   | 25,000    |
| *Tripoli, Libya.....                     | 138,000   |
| *Tunis, Tunisia.....                     | 364,593   |

\*Capitals of countries are starred.

# Important Cities of Australia and New Zealand

|                          | POP.      |
|--------------------------|-----------|
| Adelaide, Australia..... | 407,000   |
| Auckland, New Zealand..  | 123,457   |
| Melbourne, Australia.... | 1,288,000 |
| Perth, Australia.....    | 294,000   |
| Sydney, Australia.....   | 1,549,590 |
| *Wellington, New Zealand | 193,300   |

# Representatives (in Canada) of Lands Overseas

| REPRESENTATIVE               | LOCATION |
|------------------------------|----------|
| Australian High Commission   | Ottawa   |
| Austrian Consulate General.. | Ottawa   |
| Belgian Embassy Chancery...  | Ottawa   |

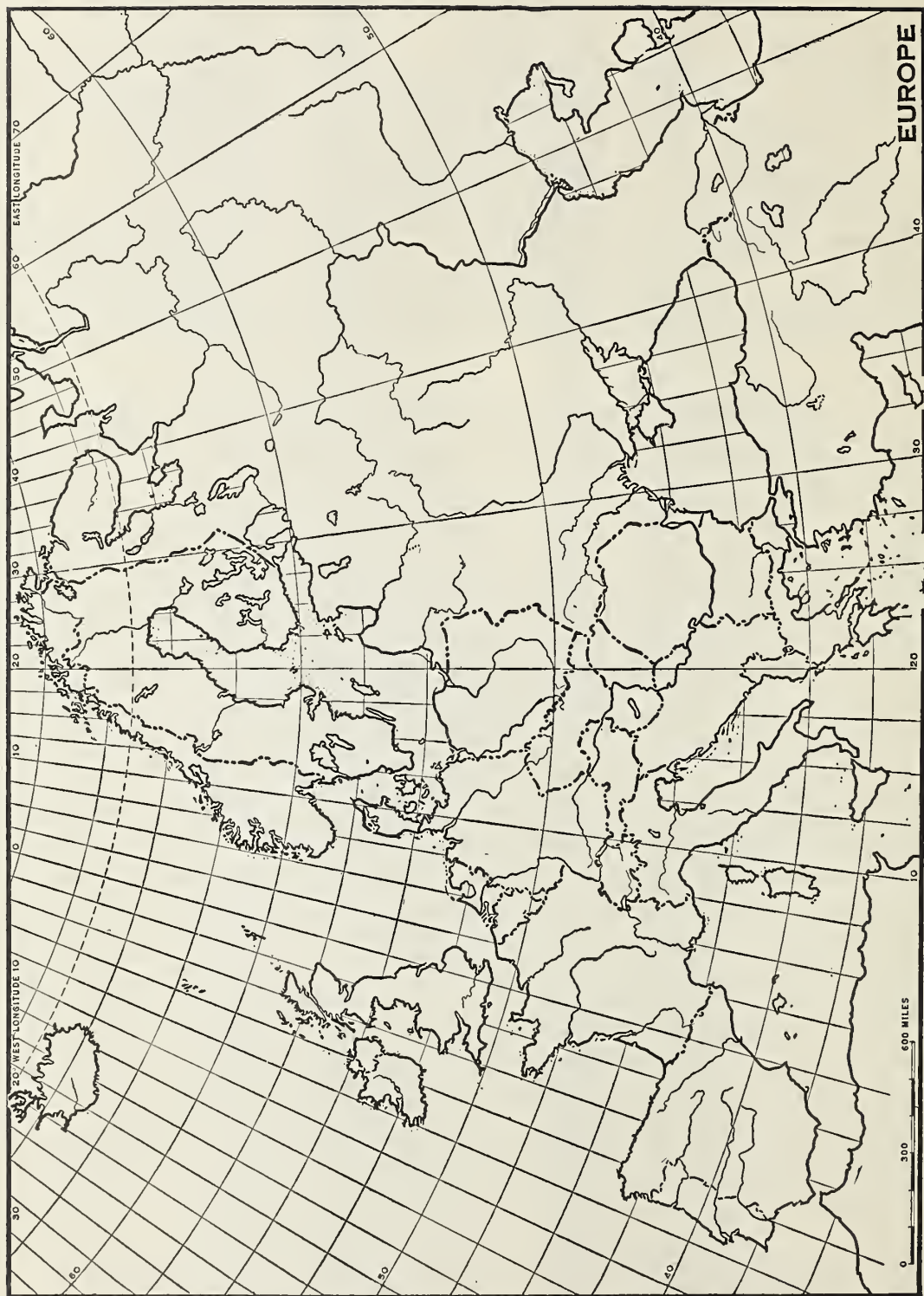
| REPRESENTATIVE                   | LOCATION |
|----------------------------------|----------|
| Chinese Embassy.....             | Ottawa   |
| Czechoslovak Legation.....       | Ottawa   |
| Danish Legation.....             | Ottawa   |
| Egyptian Consulate General..     | Ottawa   |
| Finnish Legation.....            | Ottawa   |
| French Embassy.....              | Ottawa   |
| German Embassy.....              | Ottawa   |
| Greek Embassy.....               | Ottawa   |
| Hungarian interests in charge    |          |
| of the Polish Legation....       | Ottawa   |
| Iceland Legation.....            | Ottawa   |
| Indian High Commissioner...      | Ottawa   |
| Iraqi interests in charge of the |          |
| Lebanon Consulate General        | Ottawa   |
| Irish Embassy.....               | Ottawa   |
| Israel Consulate General...      | Montreal |
| Italian Embassy.....             | Ottawa   |
| Japanese Embassy.....            | Ottawa   |
| Lebanon Consulate General..      | Ottawa   |
| Liberian Consulate.....          | Halifax  |
| Licchtenstein interests in       |          |
| charge of the Swiss Legation     | Ottawa   |

| REPRESENTATIVE               | LOCATION              |
|------------------------------|-----------------------|
| Luxembourg Legation.....     | Ottawa                |
| Monaco Consulate.....        | Montreal              |
| Netherlands Embassy.....     | Ottawa                |
| New Zealand High Commis-     |                       |
| sioner.....                  | Ottawa                |
| Norwegian Legation.....      | Ottawa                |
| Pakistan High Commissioner.. | Ottawa                |
| Polish Legation.....         | Ottawa                |
| Portuguese Legation.....     | Ottawa                |
| Spanish Consulate General..  | Montreal              |
| Swedish Legation.....        | Ottawa                |
| Swiss Legation.....          | Ottawa                |
| Thailand (Siam)              |                       |
| Consul....                   | Toronto and Vancouver |
| Turkish Embassy.....         | Ottawa                |
| Union of South Africa High   |                       |
| Commissioner.....            | Ottawa                |
| Union of Soviet Socialist    |                       |
| Republics Embassy.....       | Ottawa                |
| United Kingdom High Com-     |                       |
| missioner.....               | Ottawa                |
| Yugoslavian Legation.....    | Ottawa                |

# AIR-LINE DISTANCES GIVEN IN STATUTE MILES

| From<br><br>To             | Bombay, India | Buenos Aires, Argentina | Calcutta, India | Edmonton, Canada | Gander, Canada | Hong Kong, China | Johannesburg, South Africa | London, England | Montreal, Canada | Moscow, U.S.S.R. | New York, U.S.A. | Singapore, Singapore | Sydney, Australia | Tokyo, Japan | Vancouver, Canada | Winnipeg, Canada |
|----------------------------|---------------|-------------------------|-----------------|------------------|----------------|------------------|----------------------------|-----------------|------------------|------------------|------------------|----------------------|-------------------|--------------|-------------------|------------------|
| Bombay, India.....         |               | 9273                    | 1020            | 7280             | 6710           | 2673             | 4310                       | 4462            | 7405             | 3131             | 7794             | 2430                 | 6300              | 4188         | 7550              | 7575             |
| Buenos Aires, Argentina... | 9273          |                         | 10242           | 6940             | 5780           | 11463            | 5020                       | 6918            | 5615             | 8375             | 5297             | 9864                 | 7330              | 11400        | 7050              | 6297             |
| Calcutta, India.....       | 1020          | 10242                   |                 | 7040             | 7000           | 1534             | 5210                       | 4954            | 7607             | 3447             | 7921             | 1791                 | 5685              | 3186         | 7140              | 7424             |
| Edmonton, Canada.....      | 7280          | 6940                    | 7040            |                  | 3161           | 6480             | 9725                       | 4150            | 2030             | 4750             | 2050             | 8100                 | 8225              | 5337         | 642               | 752              |
| Gander, Canada.....        | 6710          | 5780                    | 7000            | 3161             |                | 7450             | 7250                       | 2350            | 1088             | 3600             | 1000             | 8715                 | 10750             | 6050         | 3593              | 2494             |
| Hong Kong, China.....      | 2673          | 11463                   | 1534            | 6480             | 7450           |                  | 6600                       | 5981            | 7729             | 4439             | 8051             | 1652                 | 4584              | 1796         | 6375              | 7096             |
| Johannesburg, S. Africa .. | 4310          | 5020                    | 5210            | 9725             | 7250           | 6600             |                            | 5801            | 8050             | 5851             | 7980             | 5310                 | 6875              | 8325         | 10275             | 9250             |
| London, England.....       | 4462          | 6918                    | 4954            | 4150             | 2350           | 5981             | 5801                       |                 | 3150             | 1549             | 3459             | 6744                 | 10564             | 5938         | 4470              | 3918             |
| Montreal, Canada.....      | 7405          | 5615                    | 7607            | 2030             | 1088           | 7729             | 8050                       | 3150            |                  | 4386             | 350              | 9200                 | 9954              | 6383         | 2574              | 1150             |
| Moscow, U.S.S.R.....       | 3131          | 8375                    | 3447            | 4750             | 3600           | 4439             | 5851                       | 1549            | 4386             |                  | 4662             | 5238                 | 8980              | 4650         | 5000              | 4687             |
| New York, U.S.A.....       | 7794          | 5297                    | 7921            | 2050             | 1000           | 8051             | 7980                       | 3459            | 350              | 4662             |                  | 9630                 | 9933              | 6735         | 2460              | 1281             |
| Singapore, Singapore.....  | 2430          | 9864                    | 1791            | 8100             | 8715           | 1652             | 5310                       | 6744            | 9200             | 5238             | 9630             |                      | 3920              | 3304         | 7970              | 8685             |
| Sydney, Australia.....     | 6300          | 7330                    | 5685            | 8225             | 10750          | 4584             | 6875                       | 10564           | 9954             | 8980             | 9933             | 3920                 |                   | 4860         | 7765              | 8934             |
| Tokyo, Japan.....          | 4188          | 11400                   | 3186            | 5337             | 6050           | 1796             | 8325                       | 5938            | 6383             | 4650             | 6735             | 3304                 | 4860              |              | 4695              | 5575             |
| Vancouver, Canada.....     | 7550          | 7050                    | 7140            | 642              | 3593           | 6375             | 10275                      | 4470            | 2574             | 5000             | 2460             | 7970                 | 7765              | 4695         |                   | 1168             |
| Winnipeg, Canada.....      | 7575          | 6297                    | 7424            | 752              | 2494           | 7096             | 9250                       | 3918            | 1150             | 4687             | 1281             | 8685                 | 8934              | 5575         | 1168              |                  |



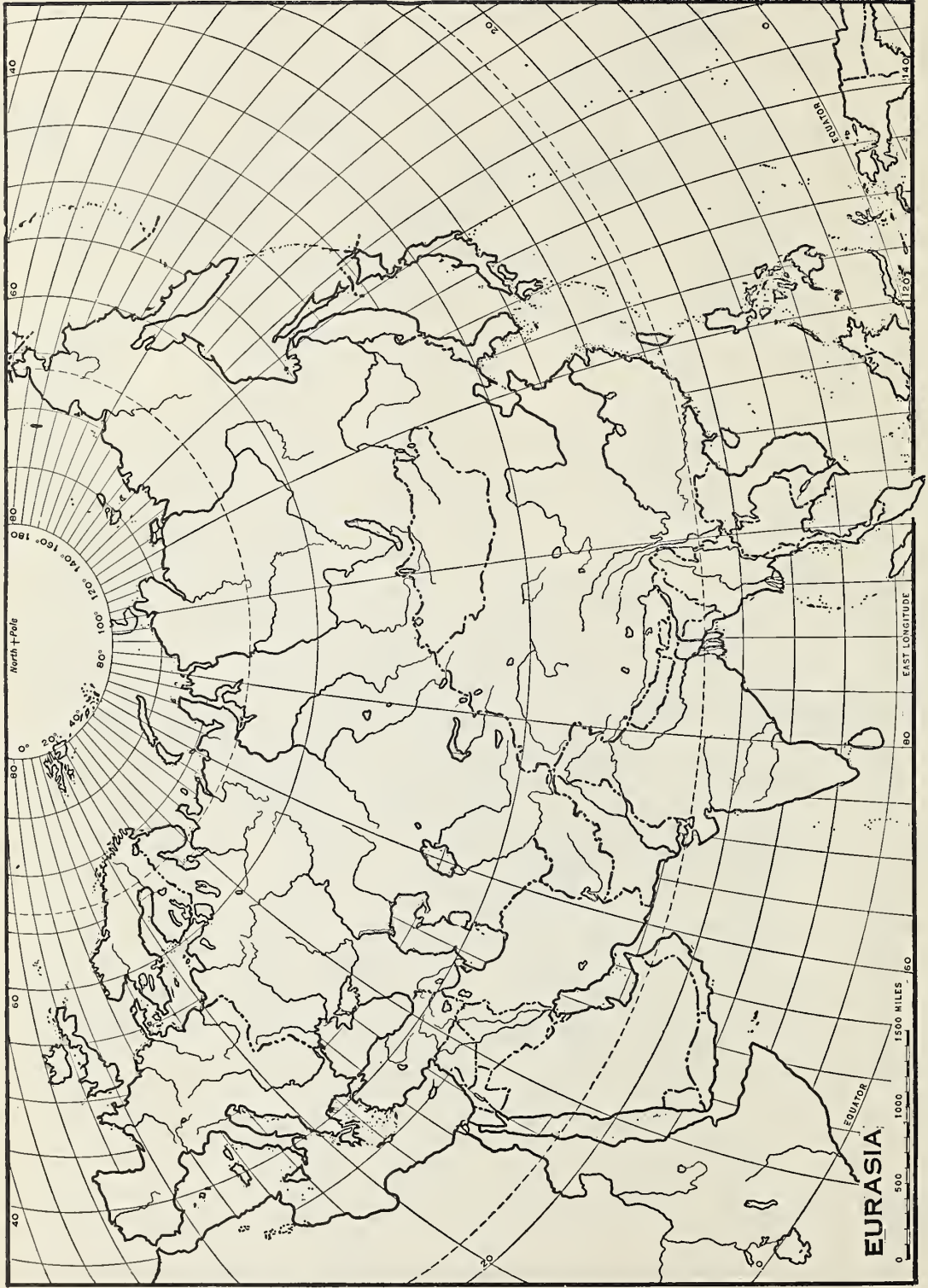


An outline map of Europe.

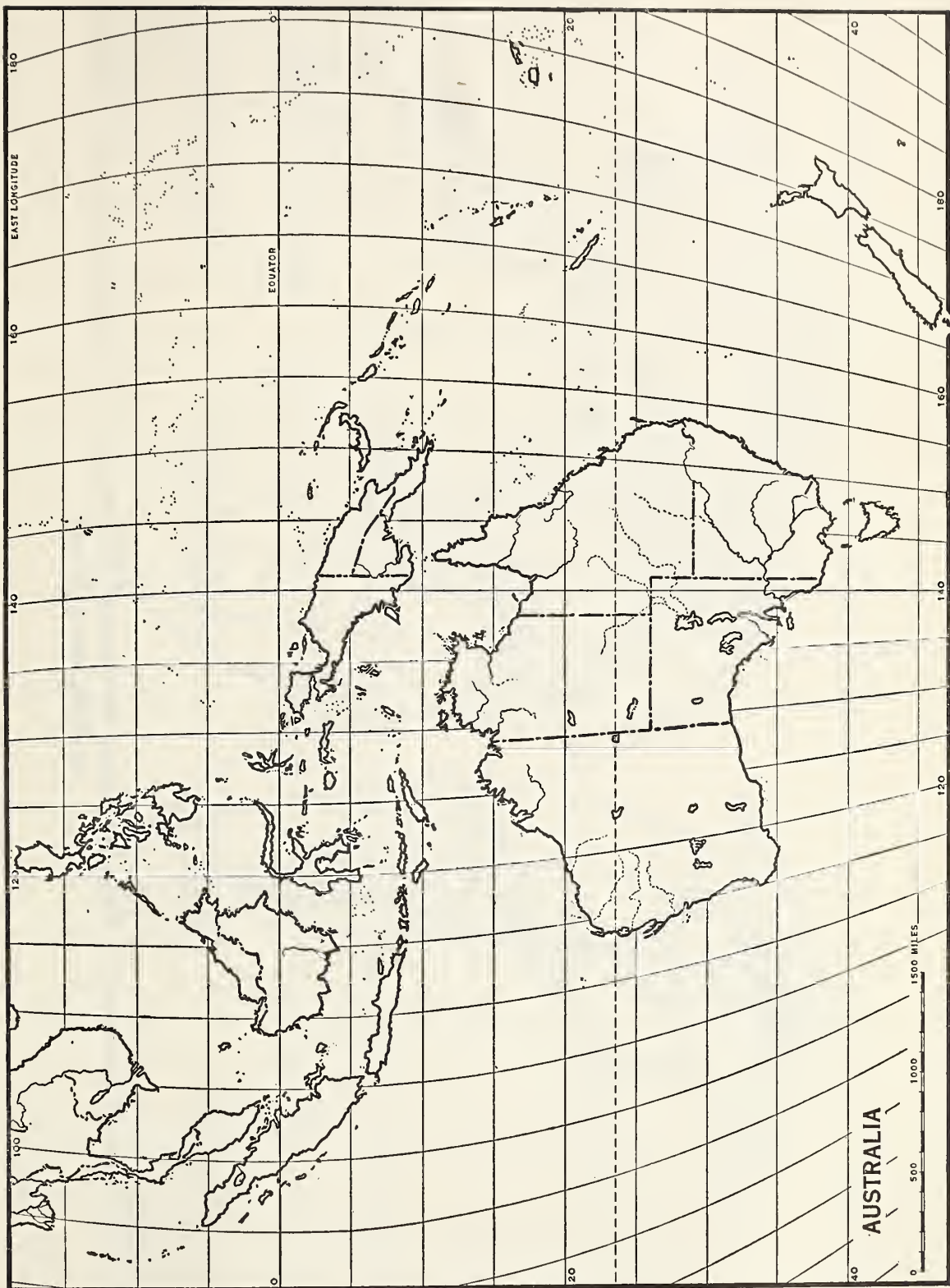


An outline map of Africa.



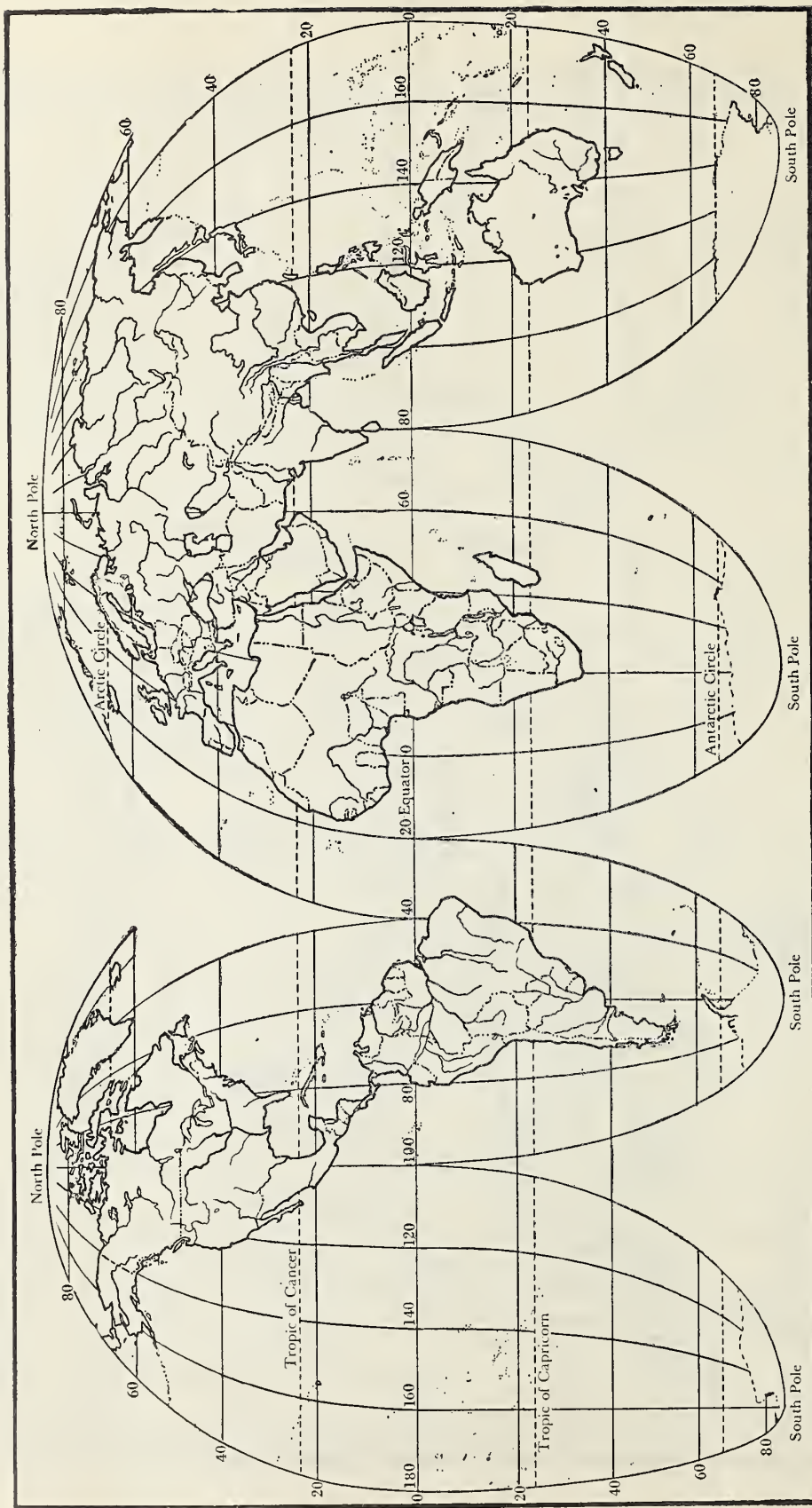


An outline map of Eurasia.



An outline map of Australia and the Pacific Ocean area.





An outline map of the world.

3 7 8 9 10 63 62 61 60 59 58





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